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The Industrial Training Director

AMERICAN MANAGEMENT ASSOCIATION
AMA

JULY, 1944

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Personnel

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..... Strictly personnel

Vacation Policy in 1944

The trend toward liberalization of vacation policies is still marked, according to a Conference Board report* on the 1944 policies of 196 companies. Whereas vacation policies were liberalized in some form by 16.5 per cent of the companies surveyed between 1942 and 1943, the latest survey indicates liberalization by 19.1 per cent of the reporting firms. Several companies that formerly required two, three or five years' service before granting a week's vacation to wage earners now grant such vacation after six months or a year of service. Workers with three to five years' service are now eligible for two weeks' vacation in some companies that previously required a longer service period.

In 78 companies the vacation period is set by the employer for all hourly workers, while seniority governs the choice in 58 firms. The most common method of figuring vacation pay for wage earners (found in 134 of the reporting firms) consists of multiplying the number of hours worked in a normal week by the employee's base pay. However, in 29 companies the vacation allowances of wage earners will be figured by multiplying hours of work by average hourly earnings for whatever vacation time is due them.

Two years ago a survey of vacation practices showed that hourly workers were receiving vacation bonuses in lieu of time off in 42 per cent of the companies studied. Last year this policy was followed by nearly 50 per cent of the reporting firms. Clearly the need for maximum output in most war plants still persists, for the percentage of companies granting vacation pay in lieu of time off has risen this year to 54.1.

* "Trends in Vacation Policy" (Supplement to *The Conference Board Management Record)*, April, 1944.

★

Suggestion Systems Hit Their Stride

A million and a half certificates have been issued by the War Production Board as honorary awards to war workers who have advanced suggestions which have speeded the war effort and cleared troublesome bottlenecks, *The Wall Street Journal* reports.* Even employees in the services have sent back usable suggestions from Iceland, Hawaii and other far corners of the earth. According to F. A. Denz of United Air Lines, executive secretary of the National Association of Suggestion Systems, 5,000 companies in the United States now have suggestion systems in effect.

A single suggestion by a Piccatinny Arsenal employee has saved almost half a million dollars thus far. Another suggestion by a girl at War Production Drive headquarters (which has inaugurated a suggestion program for its own employees) is credited with saving 265,000 sheets of paper a year.

Entertainment is helping to stimulate the flow of suggestions by Swift & Company employees, reports H. W. Seinwerth, manager of the company's suggestion program. At many of its units throughout the country this year, Swift is staging programs which combine entertainment with ceremonies in

* May 5, 1944.

awarding prizes to winning suggesters. Employees, families and friends attend these "Family Suggestion Parties," which include patriotic music, pageants, "quiz" periods, community singing, stage acts, and presentation of awards. Last year more than 20,000 ideas were received from employees—almost one for every three on the payroll, and double the number received when no Family Parties were conducted.

Several interesting highlights on employee suggestion system activities were brought out at a recent conference of the National Association of Suggestion Systems. Generally speaking, the delegates felt, a suggestion plan adopting over 10 per cent of employee ideas might be said to be functioning satisfactorily. With respect to so-called "trivial" suggestions, many delegates voiced objection to use of this term. It was felt that if an employee thinks highly enough of his company to offer suggestions to management voluntarily, management has the obligation to give due recognition to such a cooperative attitude. Establishing company-wide faith in the suggestion plan is of primary importance, and a determined effort must be made to overcome supervisory resistance to acceptance of subordinates' ideas. The educational approach to overcoming resistance was advocated; and many companies, it was indicated, have organized group meetings with supervisors and employees in order to clarify the policies and objectives underlying their suggestion programs.

A minimum award of $5 for accepted ideas was suggested as a sound general policy. While in many instances companies have established a maximum award, numerous concerns have set no limit on awards. The general practice appears to provide for payment to the employee of 10 per cent of the estimated first year's gross savings realized through a suggestion.

An analysis was made of methods of appraising acceptable suggestions involving "intangible benefits." One delegate stated that his records indicated that the average cost of an industrial accident involving injury to an employee was $950. In his opinion, careful consideration should be given to evaluation of safety suggestions, since suggestions that may seem to involve minor problems may result in prevention of major accidents.

Some executives maintain that suggestion plans are hurt more by low awards than by any other single factor. Where awards are niggardly, employee interest soon wanes. That all is not as it should be in this respect is evident from the fact that money awards for suggestions in war industry have averaged only about $16 during the past three years.

★

Women's Wages on Men's Jobs

Shortly after Pearl Harbor, when women began to take over men's jobs in war plants and in the service industries, the Division of Women in Industry and Minimum Wage of the New York State Department of Labor began to follow the trends as to comparable wages for men and women. Analyses of entrance wage rates in plants which had been granted dispensations from the labor laws, and a survey of the replacement of men by women in the service industries, have been made. All these surveys have shown that "equal pay for equal work" is accepted by a far greater percentage of employers now than in 1919. A study made in December, 1943, shows the same trend. One hundred and forty-three manufacturing plants and 56 non-manufacturing firms were visited in order to study more intensively the various problems involved in the replacement of men by women. Of the 396,884 workers employed by these 199 firms, 154,587 were women.

In 60 per cent of the 143 manufacturing plants, inexperienced women received the same entrance rates as men; and in 63 per cent of the 56 non-manufacturing firms, women received the same entrance rates as

men in all the occupations in which they replaced men.

In the 57 manufacturing plants where the equal pay principle was not observed, 44 had systems of automatic wage increases. By the end of the progression period, the differential between men's and women's wages was either wiped out or decreased in 18 cases, but remained unchanged or increased in the rest.

Women were found in many skilled jobs in manufacturing plants. Employers reported hourly rates ranging from 70 cents to more than $1.50 in the highest skilled jobs filled by women. In addition, more than three-fourths of the plants were using women as supervisors.

Employers were high in their praise of women's production on the various jobs. In 88 per cent of the 139 plants which gave this information, women's production was said to be equal to or greater than men's on all or some jobs. Seventy-one employers reported equal production on all jobs. Fifty said production of women was dependent on the type of job, and only 17 said it was less on all jobs. Where production was less, the strength factor was equally involved.

★

Seniority in the Automobile Industry

Because of the extensive movement of workers to war jobs during the period of conversion of the automobile industry to war production, and in view of the future shifts to peacetime jobs, seniority arrangements in union agreements as a measure of the order of job succession and reversion assume special significance. In a survey conducted for the Bureau of Labor Statistics by Jonas Silver and Everett Kassalow,* an attempt has been made to answer the following questions: What were the peacetime seniority arrangements in the automobile industry? How were these arrangements affected by the shifting of jobs and men during the period of conversion and war production? What claims to jobs based on seniority have been provided for in union agreements to be applied in the period of postwar adjustment?

In the course of the conversion of automobile plants to the production of military equipment, seniority difficulties were overcome either by changing to a plant-wide unit or by placing all transfers to war jobs on a temporary basis.

The problem of how to shift the working force in order to make the necessary adjustments to what may be termed wartime vertical as distinguished from peacetime horizontal layoffs has been the subject of recent union-management negotiations. In some cases management has agreed to widen the seniority unit by taking in the entire plant instead of department or division limits in order to facilitate transfers as a substitute for layoffs resulting from changes in war production schedules and with a view to the future reconversion period.

On defense and war transfers, both within a plant and to another plant of the same company, the rule has been that defense and war service shall be added to that already acquired on peacetime jobs. Actual seniority on defense and war jobs, in most cases, dates from the start of employment on these positions. Even where the rule has been that peacetime seniority carries over to wartime jobs, the latter are officially regarded as temporary in nature, though this is not always made clear to the workers involved. Protection of seniority on intercompany transfers is governed by the Office for Production Management regulations and the War Manpower Commission stabilization plans for the Detroit area.

Although none of the agreements covering the plants visited stated that seniority is to be the controlling factor in selecting workers for promotion to better-paying jobs, in practice it was found that in a number

* *Seniority in the Automobile Industry, April,* 1944, Working Conditions and Industrial Relations Branch, Bureau of Labor Statistics, U. S. Department of Labor. 29 pages.

of plants workers are promoted primarily on the basis of length of service.

The U.A.W.-C.I.O. interprets Section 8 (b) of the Selective Training and Service Act to mean that a worker's seniority accumulates on his old job while he is in the armed forces and that upon discharge he is entitled to reemployment in order of relative seniority standing. The Selective Service Administration takes the point of view that the Act requires the reemployment of all servicemen regardless of their relative seniority standing in the plant. Some friction has already developed over these divergent interpretations.

In those plants which still maintain non-interchangeable jobs and separate seniority lists for men and women, women workers who in the past two years have been promoted to jobs formerly reserved for men continue to accumulate seniority on their old jobs and accrue only temporary wartime seniority on their new positions.

★

Observations on Recent Pension Plans

New federal regulations governing company pension plans have to some extent influenced eligibility requirements, a recent study by the Conference Board* discloses. This study compares the provisions of pension plans existing before the war, and plans adopted or revised during the first two years of war, with plans created during the latter part of 1943 and the early months of this year.

While the provisions of company pension plans in these periods are similar in many respects, half of the most recent plans specify a service record of five years (the maximum probationary period permitted under the Code) before an employee may participate—in contrast to the one-year period commonly found in prior plans.

One-fifth of the recent plans restrict participation to employees whose annual earnings exceed $3,000, compared with a fourth of the plans previously. Most plans continue to specify a uniform normal retirement age of 65, though some insured plans require 10 years' participation before retirement. The practice of retiring women five or 10 years earlier than men is becoming less common.

The most significant reversal of policy has occurred with respect to contributions. Nearly 40 per cent of the group annuity plans and most of the individual policy and trust fund plans require no contributions from employees, and even those on a contributory basis call for smaller employee contributions.

The tendency to cut down on past-service benefits by counting only years of service subsequent to some specified age continues in evidence. Nearly all the most recent plans provide for vesting rights upon severance of employment, contrasted with 80 per cent of the previous plans. However, increased restrictions upon the exercise of this privilege are noticeable.

With respect to types of funding, the Conference Board reports: "From 1929 on, the group annuity plan dominated the field of industrial pensions. During the depression years particularly, this type of plan was used almost exclusively. Beginning in 1940, the individual policy plan came into prominence; but because it is not suitable for individuals whose income or employment is unstable, it has been adopted chiefly for salaried employees or for groups too small for group annuities.

"Within the past year or two, the trust fund plan has been attracting considerable attention, and a number of fairly large companies either have adopted or are contemplating the introduction of a plan based on this principle of funding. These plans are used chiefly in retirement programs which are supported by employer contributions alone."

* "Trends in Company Pension Plans," by F. Beatrice Brower (*Studies in Personnel Policy No.* 61), National Industrial Conference Board, Inc., New York, 1944.

THE PLACE OF PERSONNEL RESEARCH AS A MANAGEMENT TOOL

By CHARLES ARTHUR DRAKE

Personnel research, like research in other areas, has potentialities for good and ill. The author here cites actual examples of each application—as tool or as weapon. He further discusses the two current and extreme points of view on the place of research in the organization and emphasizes that management and research personnel must establish its proper orientation within the organization structure.

BOTH tools and weapons have in common the function of lengthening the human arm and strengthening the resources the individual may bring to bear in his struggle with environment. The difference between them is that the former are used primarily to accomplish useful work, the latter to inflict injury or to protect from bodily harm.

The foregoing suggests that the real distinction between tool and weapon lies in the *use* made of the instrument rather than in its physical characteristics; thus, an axe may be either one or the other. It also suggests that the paradox, "The better a thing is, the worse it may be," applies to the same implement, depending upon the intent with which it is used.

The same is true of research, particularly personnel research. According to the motive behind its application, it may be a useful tool or a destructive weapon. Research, as instrument, has ethical implications as well as economic value.

PERSONNEL RESEARCH AS TOOL

Some years ago an investigation of employment practices in several units of an enterprise operating in different states showed that one unit had achieved substantial savings in payroll taxes. In fact, the $7,200 annual saving in the amount of tax paid under the state unemployment compensation plan more than equaled the annual budget of the personnel office. This was accomplished primarily by transferring employees from one department to another, instead of discharging them when their services were no longer required on a particular job, and by selecting additions to the workforce from among persons on the unemployment compensation rolls. Clearly the achievement of this plant—the result of a competently planned and executed personnel program—indicated the desirability of devoting further study to this matter in other units of the company.

It was also found that another of the company's plants, in a neighboring state having similar laws, not only was paying taxes at the maximum rate but had also mortgaged its future. Through indiscriminate firing and failure to hire from the unemployment compensation rolls, the plant's

account was "in the red" to an extent that only years of enlightened practice could relieve.

One might moralize on the ethical implications of this result of somewhat limited and forthright personnel research. It does imply substantial returns from humane and foresighted employment practice. Beyond that, it presents an argument for changes in public policy—to reward socially motivated behavior. Here the emphasis is on personnel research as tool.

PERSONNEL RESEARCH AS WEAPON

A different emphasis appears in the following instance: A university president was impressed with the amount of seeming "dead wood" among his faculty members. Those who appeared to be least effective as teachers were the same ones who, by active opposition or incompetent indifference, obstructed his reform program. The obvious and easy solution was to expose the ineffectiveness of these recalcitrants, and to fire them forthwith.

The research program designed to achieve this end was to be employed primarily as weapon. The extent of its application as tool depended upon the utility of the result.

The president's plan was based upon the assumption that the amount a student learns is proportional to the excellence of the teaching. The research findings invalidated this common-sense assumption by showing that gains in measurable knowledge in this case were largely, if not entirely, unrelated to who did the teaching. Thus a purge of personnel was unwarranted.

RESEARCH IDEALS VS. OPERATIONAL EXPEDIENCY

The two foregoing instances emphasize another consideration affecting the status and scope of personnel research. The immediate aim of research is the discovery of truth, in terms of fact, principle, or hypothesis. If the researcher has no responsibility beyond that of drawing conclusions from his data, he can more easily achieve—and afford—that intellectual honesty which marks scientific method. On this plane the result is most nearly devoid of personal bias, of self-interest, and of other subjective effects.

The executive who is charged with operating responsibilities as well as with the research function is not so happily situated. Management is continuously weighing expedients, one against another. In so doing, not every course of action that seems obvious or desirable to the research specialist is adopted either immediately or in the near future, or even eventually. Considerations weighing heavily with practical management often weigh far less with the more detached and properly idealistic research specialist.

Sound management policies dictate, for example, that not every possible improvement in process and product should be immediately put into effect. Almost every company producing a complex product is engaged in product improvement, and any given moment this effort will show results in various stages of development—some ready for the market, others only a sketch or a hope. Proper timing in adding such improvements to the product is sound business.

The research specialist is impatient, however, to see his results embodied in operations. He resents the expediency that withholds improvements for a year or more because of marketing conditions. His ideal is, and should properly be, the most nearly perfect product possible; his weakness, in the view of managerial expediency, is that he wants it immediately.

The impatience of the researcher handicaps him in management. As manager, he tends to move too fast for his associates, to take on the character of a reformer. Research is assumed to be more congenial to the man of thought, i. e., the person who is habitually reflective. The executive, on the other hand, is the prototype of the man of action. If this distinction is valid, it offers an emphatic answer in the negative to the question of whether a research specialist should be charged with operating responsibilities.

CONTRASTING VIEWPOINTS ON RESEARCH

There are two extreme points of view on the foregoing issue. One of these urges that the head of a research function should be free from any responsibility for the utilization of his results. It is contended that only in this way can the research effort be given major emphasis, and the undivided attention it requires.

Implied in this argument is a recognition of the danger that the greater prestige and more tangible results usually characteristic of production or selling may lead to neglect of the research function. This danger is not imaginary—a glance at the salaries paid for each function should explain why. And the fact that some few able men move on from research with some operating responsibilities into full-time operating positions confirms the danger. It would be far more desirable and ultimately more profitable if the reverse occurred, and able men advanced from operation into research, enhancing the prestige of the latter.

The other point of view is that the head of the research function must have wide latitude in participating in policy-making and operating decisions. Proponents of it contend that any significant research has potentialities which should affect the whole organization. The mind fathering the research, they believe, best understands the characteristics of its off-

spring and, therefore, should have sufficient prestige and authority to guarantee its proper development.

Lacking status and opportunity to initiate and supervise the use of his conclusions or inventions, the researcher chafes at any bungling by operating specialists. Part of his impatience grows out of his justifiable professional pride in his work. His greatest satisfactions come from full and profitable exploitation of what he has wrought. To achieve this, he feels he should be able to go to the top—to have access to the highest policy-making authority to argue his points. Only he can present the case adequately; and only he can make sure his efforts are not distorted in practice—if he has sufficient authority.

APPLICATIONS OF DIVERGENT VIEWPOINTS

To illustrate these contrasting points of view still further, consider the following possibility: Research has thoroughly established that savings up to 55 per cent in direct labor time may be effected by substitution of dual operation for the usual one-hand or "natural" type of operation in hand work. Assume a survey has shown that an average of 10 per cent of the jobs in the several operating units of the company can be adapted to dual operation. What would follow in line with each viewpoint?

The pure, non-operating researcher makes his well-documented report, recommends the acceptance of his conclusions, and offers to assist in the conversion of the jobs. He looks to factory managers and production managers to initiate the changes and follow through on the conversion, while he stands ready to assist as adviser. He views himself as a staff specialist, devoid of operating responsibilities of the line type.

On the other hand, the researcher with operating responsibilities plans his installation at the time he organizes his research data and conclusions. With the approval of, and in the name of, the factory manager, he proceeds to effect the changes, following through to their final embodiment in conventional routine. He is a staff-and-line executive, perhaps with the title of deputy-, assistant-, or associate-, something-or-other, just to add weight.

A pair of similar instances can be drawn from the field of foremanship training. Here the outside specialist, often from a university faculty, represents the pure staff position, presenting his material on a "take it or leave it" basis and assuming no responsibility for its use. The opposite situation would be one in which an assistant operating official in the line organization teaches the theory of foremanship and supervises the practices of foremen as well.

DYNAMICS OF RESEARCH IN PERSONNEL

One must concede that there are creative minds which function best without any responsibility for applying the products of their research, but

these are relatively rare among the research specialists presently at work. Fact-finding personnel research of the most valuable type is not congenial to such personalities. It requires the dynamic thought patterns of the calculus rather than the static concepts of geometry, and a readiness to become a part of the phenomena investigated.

It is possible to present a sound argument for the view that the most effective planning, or projection of activities, must rest upon an analysis of dynamic, changing current relationships. The mind best adapted to such projection is one qualified by education, training, and practice to deal with things in process along a time axis. Training that features static relationships may be disqualifying for the projective type of thinking required in research, particularly in personnel research involving human dynamics.

RESEARCH: A PRACTICAL ACTIVITY

The foregoing considerations add emphasis to the view that personnel research cannot devote much time or effort to the arrangement of concepts in neat categories and fixed patterns. It must concern itself with facilitating changes from what is to what should be; it must aid in the attainment of a purpose, providing guidance toward a visualized and well-defined end.

In a discussion of ends or objectives, there is always danger of vague social speculations and the ubiquitous "do-good-ism" that has discredited the older Democracy in Industry and similar schemes now only of historical interest. The social theorist, preoccupied with an eventual perfect—but static and unrealistic—organization of society and of the industry making this possible, has no place in personnel research. The social philosopher has a proper function in our society in setting goals and emphasizing values, but he is usually not sufficiently versatile and realistic to be effective in day-to-day guidance toward determined ends. Impatience with the details of daily operation, which are the raw materials of realistic personnel research, tends further to render him ineffectual in such a position.

Personnel research must concern itself with tangibles, with thoughts about things. But it is easy to slip from thinking about things into the usually less profitable area of thinking about thoughts. And since thoughts are not measurable, thinking about them removes the activity from the realm of science into the realm of philosophy of the least substantial sort. This has confused and thereby discredited much that has been done in the name of research.

What is here implied is not that the realistic researcher should be immune to philosophizing or oblivious of the implications of social justice, but rather that he should not be distracted from his major activity. As

craftsman he must forge tools suitable to a valid purpose, and as exponent of their use he must demonstrate their efficacy. He must, in short, get results.

Facing the need for results, he is always tempted to insinuate himself into the fray, to become a manager. This is particularly likely to be true if he is aggressive and ambitious for either personal power or prestige. Such a man will demand that personnel research encompass the whole organization from top to bottom, that it—and he—have a place in all policy-making, all comprehensive planning. He will not be content merely to draw conclusions, to recommend policies, or to suggest courses of action based on his findings. His ambition to be the throne, and not just the power behind it, is not easily disguised. With requisite ability and experience he will ultimately find his niche in the organization as a manager.

At the opposite extreme, the detached researcher derives his satisfactions from the research processes themselves, and defines his function as that of supplying tools to management. He, too, seeks a personal reward in recognition and professional status, but without the incentive to operate —to plan and order—the routine of production.

THE IDEAL RESEARCHER IN PERSONNEL

Somewhere between these two extremes lies the type of personality and the type of activity most easily and effectively integrated into the usual organization. The individual performing the function is neither a competitor of the line operating personnel nor a threat to other staff members. He has a necessary and justifiable interest in seeing his conclusions embodied in practice, but works to this end through the established channels, the authority for such changes as are necessary emanating from customary sources. He is aware of, and amenable to, the need for weighing expedients in management, with the inevitable delays and frustrations. He works cooperatively in the common effort, not competitively with his fellows. He depends upon logic and persuasion, rather than upon authority and prestige, to influence acceptance of his conclusions. He is realist and philosopher, and does not antagonize his hard-working associates by condescension or merit their contempt by flights of fancy. He is ideally, and in practice can be, an exponent of progress and a leader in his own right.

Speed the Day of Victory!—Buy More War Bonds

Manpower Control

AMERICA'S already overworked personnel men are headed into what promises to be the most confused manpower period of the war. With the War Manpower Commission's new nationwide job referral plan now in effect, few employers know exactly how they are supposed to operate under it.

The key to the trouble ahead, as this scheme begins to function, is local option. Each area and regional WMC office is left to work out its own regulations under a general policy laid down by War Manpower Commissioner Paul McNutt in his order on the referral program.

Companies operating on a national basis will have to adjust themselves to several sets of rules. In some cases these rules haven't yet been drawn. In other cities WMC offices are only partly prepared for the job.

The best advice to employers, WMC men say, is "see your local U.S.E.S. office." It's the agency through which all employers must find new workers or through which the unemployed must obtain jobs after July 1—unless U.S.E.S. designates other agencies to help, as it will do in many cases.

In general, the referral system will apply only to male workers over 17, although in Washington, which already has a referral system, women are included too. In certain areas in Illinois, Wisconsin and Indiana, women, as well as men, will be referred to jobs through the U.S.E.S.

The aim of the referral program is simple: Workers are to be channeled into manpower-short war factories by control over who hires people and over the people seeking jobs. In 184 areas where labor is especially short, employment ceilings will be set—each firm will be told how many people it can have on its payroll.

Because WMC headquarters at Washington leaves it up to local offices to decide how these things shall be done, or even if they *should* be done, there will be considerable uncertainty as the program gets under way. In some cities it is quietly suggested that the plan won't be rigidly enforced. The scope of it lends strength to this idea.

One question that immediately presents itself is what other agencies the U. S. Employment Service will designate to represent it in this work. WMC has suggested that union hiring halls, employers themselves, colleges, other normal hiring channels might share the responsibility for referrals.

—*The Wall Street Journal* 6/26/44

Boom in Hospitalization Plans

SINCE employers got wind of the fact that their contributions to hospitalization insurance for employees not only were legitimate as income tax deductions but also were acceptable as direct wage boosts to the National War Labor Board under the wage freeze, memberships in Blue Cross hospital plans have increased at the unprecedented rate of about 50,000 a week. The Associated Hospital Service of New York alone reports that 250 companies began to pay nearly all of employees' hospitalization insurance fees in the last half of 1943.

Since the Julius Rosenwald fund subsidized its beginning in 1937, Blue Cross has enrolled more than 14,000,000 members (the majority through 250,000 cooperating employers) and has paid more than $200,000,000 in hospital bills to the 2,500 United States hospitals participating in Blue Cross programs.

Actually Blue Cross is not a national organization; it is merely a seal of approval conferred upon local hospital insurance groups which meet standards set by the American Hospital Association. But a member of the Blue Cross in Cincinnati, for example, can expect paid hospitalization in Boston, Denver, or any other place in the United States where there is a Blue Cross affiliate.

—*Business Week* 3/18/44

THE 10-HOUR DAY PROPOSAL

Manpower shortages have led to extensive experimentation with the 10-hour, two-shift schedule, in place of the eight-hour, three-shift day—in some cases with favorable results. Latest data on the question is embodied in the following article, which comprises the text of a memorandum recently issued by the Manpower Requirements Office of the WPB, over the signature of Tudor Brown, Deputy Vice Chairman, to Area Production Urgency Committees and WPB regional directors.

IT HAS been proposed that a 10-hour day with two-shift operation, in place of an eight-hour, three-shift schedule, be adopted by plants in critical labor areas as a means of achieving better utilization of the limited labor force. A number of arguments are advanced in favor of and in opposition to the proposal. Whether the 10-hour shift can be employed successfully depends upon a variety of plant and community factors. Experience to date in plants which have changed from a three- to a two-shift basis has been inconclusive, largely because of changes in other factors which affect plant productivity.

In comparing alternatives, a distinction must, of course, be made between the 10-hour shift on a five-day week and the same shift on a six-day week. It is generally agreed that a 60-hour week is not desirable, except under very special circumstances. In the following comparisons, reference is made generally to a 10-hour shift, five days a week, as against an eight-hour shift, six days a week.

ARGUMENTS FOR 10-HOUR SHIFT

Arguments for the adoption of the 10-hour shift include:

1. Plants located in critical labor areas have frequently found it impossible to obtain sufficient manpower for the third shift, largely because of the unwillingness of the workers to take employment on a night shift when daytime employment is available. Under these circumstances, the abolition of the inadequately manned third shift may permit transfer of the workers to the first and second shifts or to other plants where the operation of a complete crew brings about higher man-hour production. Improved production on two-shift as compared with three-shift operation may also result from better supervison, especially where the plant has spread supervision too thinly in attempting to maintain three shifts.

The advantages of improved supervision following the substitution of the two-shift for the three-shift schedule were noted at the North American Aircraft plant at Kansas City. In that instance a definite improvement in employee morale resulted.

2. The reduction in working days from six to five, even though

accompanied by the longer workday, may induce additional workers to come into the plant, especially workers who have been accustomed to a five-day week in less essential activities. The Women's Bureau of the Department of Labor reports that a management survey of 1,000 women employed in a Los Angeles aircraft plant revealed that 85 per cent preferred the 10-hour, five-day week schedule.

3. In some cases a decrease in absenteeism has been noted where the plant changed from a six-day to a five-day week. This appears to be closely connected with the improved employee morale resulting from the extra day off. The War Manpower Commission reports that the lengthening of the workday at the Glenn L. Martin plant in Baltimore, with provision for one Saturday off per month, resulted in substantial production increases because of the reduction in absenteeism.

4. The opportunity for increased weekly earnings may attract more workers to the plant.

5. In some instances the five-day, two-shift operation has permitted substantial improvement in plant and machinery maintenance, which can be accomplished on Saturday when the plant is down. This may be an important factor in labor shortage areas where it is difficult to obtain maintenance workers for off-hour schedules.

OBJECTIONS OFFERED

Among the objections to the 10-hour shift are the following:

1. The 10-hour day, two-shift schedule is, of course, not feasible for continuous process plants. In the production of aluminum and magnesium ingots and in the operation of iron and steel blast furnaces, in refineries and in many forms of transportation, the necessity of uninterrupted schedules prevents the change to the 10-hour shift.

2. The advantage of increased daily hours of work on the 10-hour shift may be offset by increased absenteeism. This is especially likely to happen in the industries requiring heavy physical labor under bad working conditions. In a plant producing heavy-duty gasoline engines, absenteeism doubled when the schedule was changed from eight hours a day, six days a week, to nine one-half hours a day, five days a week. Bell Aircraft gave as one of six major reasons for abandoning its plan for the 10-hour shift the anticipation of increased absenteeism, especially among women.

There are a variety of causes for the increase in absenteeism resulting from the change to a 10-hour shift. Employees who at first respond favorably to the 10-hour, five-day week may soon find that the longer daily hours of work interfere with their personal affairs to such an extent that they must occasionally take time off. The increased

absenteeism may also result from fatigue and fatigue-induced sickness and accidents associated with the longer workday. The problem of absenteeism is especially acute in plants employing a large percentage of women, many of whom find it impossible to take care of their household tasks in addition to spending 10 hours a day in the plant, and in some cases upwards of two hours in traveling to and from the place of work.

3. Some loss in efficiency almost inevitably results when hours of work are increased from eight to 10, because of increased fatigue. This factor may be quite important in operations involving considerable physical effort, constant standing at the job, extreme heat or dust, or other unpleasant working conditions. It has been found, for example, that in the medium heavy machine process in a plant producing gear couplings the efficiency rate under a 10-hour, five-day schedule was 4 per cent lower than under an eight-hour, five-day schedule, and 6 per cent lower under a schedule of 10 hours for five days with eight hours on Saturday. It must be noted that these comparisons do not take into account other adverse factors, such as absenteeism, which would reduce total production.

4. Even though the increase in weekly hours of work results in some increase in total plant output, such adjustment, if accompanied by a lower man-hour output, may not represent the most effective use of the available manpower where other equally essential plants could use the labor more efficiently.

5. The proposal to increase daily hours of work may meet with considerable resistance from companies required by union contracts to pay daily overtime rates. This is an important factor in the iron and steel industry and in iron ore mining.

6. A change in the work schedule from three to two shifts, with the accompanying changes in starting and stopping times, may result in serious disruption of community facilities schedules of which have been adjusted to the three-shift operations.

Among the most important local facilities affected by such changes are the following:

(a) *Transportation*—Where the local transportation system must meet the requirements of several large plants, a change in the work schedule of one of the plants may require exceedingly complex shifts in the transportation arrangements. On the other hand, a general change to two-shift operation might ease the personnel problems of the transportation companies, which may be having difficulties in obtaining operators for 'round-the-clock service.

(b) *Stores*—The problem of adequate shopping time is especially important for plants employing large numbers of women. The change from an eight- to a 10-hour day may deny the employees an opportunity for the daily buying of groceries and other tasks which, perhaps, cannot be delayed until the Saturday holiday. In communities where employment in stores is not considered essential, the stores may have difficulty in recruiting workers for odd hours. This problem has, of course, been met in some cases by the establishment of stores within the plant so that workers may do a minimum amount of shopping during working hours.

(c) *Nursery schools*—The provision of adequate child care facilities is a prerequisite to the employment of large numbers of mothers of young children, and the nursery school hours must, of course, be adjusted to the mothers' working hours. The operation of existing child care facilities is already severely handicapped by local shortages of suitable nurses and teachers. This problem may become more acute if the schools are required to operate 10 hours rather than eight hours a day.

7. The change to a 10-hour day may conflict with legislation limiting working hours per day or per week or preventing work during particular times of the day or night by women or minors.

CONCLUSIONS

The limited information available does not warrant specific conclusions as to the conditions under which the adoption of a 10-hour in place of an eight-hour shift may result in better manpower utilization. Many factors affect production rates in various ways, so that it is virtually impossible to isolate and study the effects of any one factor. In many of the cases studied, the change in scheduled hours of work was only one of a variety of steps taken to improve production. The Bureau of Labor Statistics, for example, has studied a number of plants in which changes in working hours have occurred. Of 40 plants selected as having an apparently consistent system of operation over a fairly long period of time, only 15 presented the conditions necessary for adequate statistical measurement of changes in efficiency, absenteeism and output brought about by changes in hours of work.

To date, only six of these cases have been analyzed, with results that do not support definite conclusions. The War Department and the War Manpower Commission have also studied a number of cases, likewise with inconclusive results. It is worthy of note, however, that an investigating committee, representing eight government agencies, including the War

and Navy Departments, has recommended the eight-hour day and the 48-hour week as "the best schedule for sustained efficiency in most industrial operations."

One general observation may be made: Employee morale is perhaps the most important single factor affecting man-hour productivity. If the employees recognize the need for greater production and are convinced that the proposed change in working schedules will contribute to that end, they will respond to the best of their ability. It must be noted, however, that the initial employee enthusiasm for the five-day week may wear off if increased fatigue, inadequate community facilities, and other similar factors affected by the longer working day prove to be more difficult to cope with than they have anticipated.

It is evident that each establishment presents a different and peculiar problem. No general policy either for or against the 10-hour shift is warranted. Nevertheless, where labor shortages prevent efficient manning of the third shift, the possibility of changing to a 10-hour shift, five-day week should be explored. In the event that conditions in the particular case seem to be favorable, it is suggested that the change to a 10-hour shift, five-day week schedule might profitably be tried out on an experimental basis, subject to the provisions that: (a) careful records of production be made, covering periods before and after the change in hours, to demonstrate conclusively the effect of the change on man-hour productivity and total output; and (b) the change be made only with the agreement of the employees affected. If experience shows that the 10-hour shift, five-day week does not result in a significant increase in output, the 10-hour day should be abandoned.

An Effective Employee-Management Council

WARTIME efficiency in at least one Federal Government office has been materially aided by creation of a unique employee-management council to resolve those specialized problems obtaining in an office staffed mainly by stenographers and clerical help and operating on a basis of acknowledged impermanence. As a pioneer among government agencies in this idea, the District One Office of the Petroleum Administration for War, New York City, already boasts several notable achievements by its council despite its necessary subordination to the normal functions of civil service.

The office has well over 100 employees of a clerical and stenographic classification on a "duration basis" whose hopes, fears, ambitions are naturally more intense and perhaps less inhibited than those of workers in more permanent positions.

In order to meet some of the special problems created by these conditions, H. W. Dodge, former Director in Charge, established in January of this year an employee-management council comprising more than a dozen employee representatives who

were elected by their associates, and three representatives from management, who were appointed by Mr. Dodge.

The council functions as an open forum in which any employee or management problem may be discussed. As a result of such discussion, the members of the council may then suggest a course of action either to the employees or to the management. Of course, as all government employees are subject to more or less rigid Civil Service regulations, a great many matters, such as job classifications, rates of pay for each category, vacations, leaves of absence for illness, and similar questions, are already resolved.

However, beyond these, many additional administrative problems arise on which the Director in Charge and his Associate Directors are only too anxious to get the responsible and considered advice of the employees themselves. The employees, on the other hand, in being given an opportunity to voice their opinions, realize that they bear a responsibility which must be honestly and faithfully carried out.

The employee-management council does not operate as a bargaining agency, but it actually serves as a buffer between management and employees and vice versa. The status of the council is entirely unofficial, yet the frankness of its discussions and the confidence with which it moves into any problem it wishes to discuss have won it the respect of an overwhelming number of employees, who now feel that they can go to the council with their problems without any hesitation.

There is no partisan division of employee members as against management members, and very often during a heated discussion an outside observer could not possibly distinguish from the arguments which persons belong to each group.

In its short existence, the employee-management council has already achieved several worthwhile ends:

1. After several weeks of discussion at its weekly meetings, the council drew up and presented to management a promotion plan which was accepted and successfully put into effect. This plan calls for the filling of positions from within the organization wherever possible, and outlines the exact mechanics of each promotion.
2. The council is sponsoring bi-weekly Office Educational Meetings, at which an attempt is being made to acquaint the office as a whole with the workings and responsibilities of the individual divisions. These meetings are generally addressed by the Director of the Division, who outlines his work and then displays a film illustrating various phases of work in the petroleum industry.
3. The PAW has an over-all suggestion plan, the prizes for which are awarded in Washington. However, at the instigation of the council, the suggestions turned in from the New York office are, in addition, judged separately for a monthly cash prize.
4. As interest in the Red Cross blood bank was flagging, the council took a hand in it and has now arranged for regular visits to the blood bank by 100 per cent of the employees who are physically able to make regular donations of blood.
5. It is not customary in government agencies to pay salaries with checks having a stub showing various types and amounts of deductions made at source. This had been causing considerable confusion among the employees, so a subcommittee was appointed to see that each employee was provided with the necessary information.

In addition to these activities the council has tackled other office problems, such as the providing of a lunchroom, establishing facilities for physical checkups, and fostering the work of an entertainment committee. There have been, of course, many other discussions in the council which resulted in negative or no action.

Insofar as is known, this employee-management council is a pioneer in its work, as no other body similar in make-up and purpose is believed to exist.

THE FOREMAN* EXPRESSES HIS TRAINING NEEDS

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Only when the foreman's job is dissected and the importance of each component carefully weighed can a proper supervisory training program be devised. This article describes the findings of a survey through which management was able to determine exactly what the average foreman does, where he needs help, and the type of courses he prefers. While all the data uncovered may not be directly applicable to other plants, this report points the way to a more factual approach to meeting foreman training needs.

FORTY years ago the job of the average foreman was vastly different from what it is today. Industry was slower then. War production schedules were never dreamed of; in fact, "mass production" was barely beginning to assume importance.

The foreman used to be simply an "expert" in some line of work who had been with the company long enough to be trusted with the keys to the front door and a few extra tasks. Now, the foreman in a manufacturing section of an RCA plant, for example, must be able to anticipate needs for new workmen, help select these workers for best job performance, see that they learn to do their complex jobs efficiently, take care of complex material-machine-man problems by the score, cut costs and waste to the very minimum, handle a multitude of human relations difficulties, and keep the records straight on all these matters. This is no small task. The foreman must be a combination of engineer, accountant, business manager, sociologist and psychologist.

Large numbers of foremen today feel that they have been shorn of their responsibilities until they no longer are "part of management." Oddly enough, in many companies the blunt truth is probably exactly the opposite. The job of foremanship has gradually expanded until it demands capacities and abilities not too easy to find in one person.

But what are the duties and responsibilities of the average foreman in our plant? Everybody has a vague idea, but no one seems to know exactly what the foreman *does,* what *help* he needs, what *he* finds difficult to do, where *he* feels he needs training.

Until we know exactly what the foreman does in his daily job, what he finds most difficult, and where he most needs help, we are unable to set up adequate training facilities for him. Efficient training in industry

* The term "foreman" as used in the RCA plants refers to the *supervisor in charge of a recognized section of a manufacturing department.* He supervises assistant foremen and working group leaders and, through them, the other employees in his section. He reports to a general foreman or a superintendent who is responsible for two or more manufacturing sections.

is always based on accurate job analysis and careful evaluation of the workman's needs.

To bring the facts to light, a survey of the average foreman's job was recently made at RCA plants. Some of the findings give new meaning and emphasis to many of the training courses already under way; others indicate the need for new courses.

SURVEY METHOD

The survey method was rather simple, but the study was carried out as accurately as possible. First, an extensive breakdown was made of the foreman's job. The broad areas of his work were separated into those involving personnel procedures, equipment, materials and supplies, methods, production techniques, quality control, cost control, and human relations. Then each of these categories was further analyzed into its components, and under every subheading were listed the specific duties and responsibilities involved in job performance. After several revisions, a new list was assembled, containing about 200 items ranging from duties which only a few foremen performed to those included in every foreman's job.

The extensive breakdown list was then submitted, during personal interviews and conferences held on company time, to a good sample of the more experienced foremen in manufacturing sections. As experts in their field, these foremen were asked to identify the items which the *average* foreman performs himself and those which he delegates to a subordinate or recommends for action. Each was also asked to weigh the importance of each item in the average foreman's job, the *difficulty* the average foreman might find in handling it, and the average foreman's *need for training* in the duties involved.

Other forms of the check list were presented to determine the percentage of time the average foreman spends conferring with persons representing the various plant activities during his average workday. Then all these data were compiled and analyzed to discover general trends, some of which are represented here graphically.

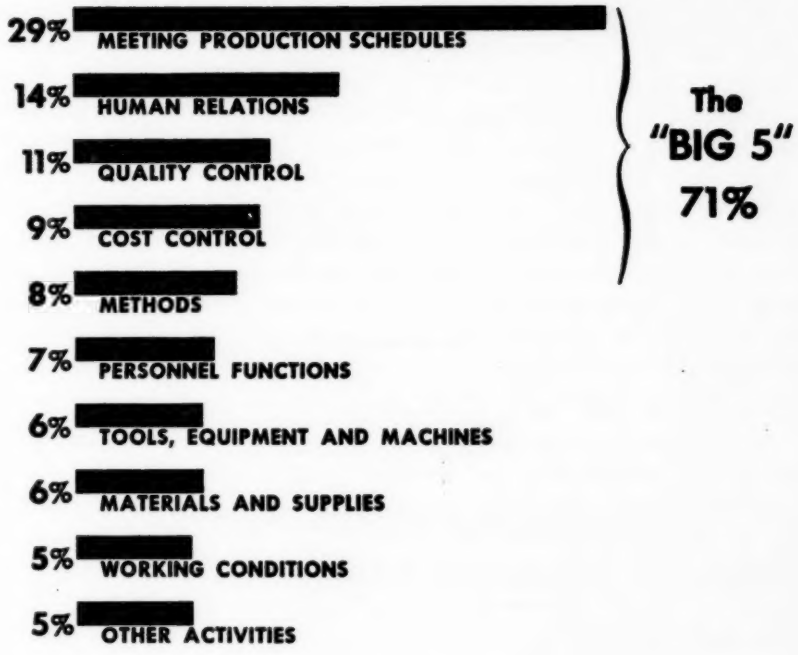
THE 'BIG FIVE'

More than two thirds (in fact, 71 per cent) of the average foreman's day is spent in activities involving various techniques for meeting production schedules, handling human relations, solving quality control problems, maintaining cost control, and methods engineering. These are the "Big Five" of the foreman's job. (See Figure 1)*

* The findings of this survey probably would not fit any other industrial organization because of differences in product, processes, methods of plant administration, organization pattern, existing training programs, etc.

Fig. 1

THE AVERAGE FOREMAN'S WORKDAY



The following definitions will clarify the graph:

Meeting production schedules is the major task in the foreman's daily job. He must study specifications, blueprints, and work schedules, and interpret all these in terms of material requirements and man- and machine-hours. Meeting production schedules demands effective planning of each day's work, matching workers' skills to operational needs, and adjusting the whole plan to meet unexpected emergencies. The foreman must keep operators employed at all times. It is part of his job to check the progress of orders in his section; often he himself checks the shipping schedule. He must know how to route the work through the section efficiently, arranging to combine orders, wherever possible, to reduce setups. All these duties and responsibilities are carried on with the single purpose of meeting production schedules.

Human relations permeate the entire industrial situation from top to bottom, and establishing and maintaining good human relations is a very important phase of the foreman's job. In his section he sets the pattern

for getting along well with fellow workers; he must understand people and know how to direct their efforts effectively. This is a difficult task unless he has learned how to take a personal interest in the worker, unless he knows how to encourage the worker on the job, unless he can teach people how to do their jobs better. The foreman must be able to sense causes for dissatisfaction and remedy them before open grievances arise. He has to interpret the workers to management and management to the workers. He is expected to get along well with other supervisors; certainly he should be able to maintain good relationships with union officials. And these are only some of the highspots of good human relations. The foreman must understand people very well indeed if he is to be successful in getting them to work harmoniously and energetically.

Quality control represents another important area of the foreman's job. It is his responsibility to maintain quality standards, to discourage waste. He must see to it that workmen understand the causes of spoilage and shrinkage. A very important part of the foreman's job is to develop in his workers a high degree of quality-consciousness.

Cost control demands much of the foreman's energy too. He is called upon to help management set accurate budgets for his section, and then to operate within these allowances. Management expects him to run down excessive cost factors, eliminate their causes, devise methods that will lower them. He must encourage workers to be cost-conscious. These things are critically important to a company's survival in a highly competitive market.

Methods problems which confront the foreman are often very complex. Generally he cooperates in the time study of jobs, and he has to help his workers to understand these projects and encourage them to cooperate heartily. He must stimulate active interest in work simplification, so that every worker will constantly seek better methods to produce better products. Higher management needs the foreman's expert advice in matters of major changes in job setup, and he can help greatly in the establishment of job breakdowns to permit the employment of lower skills where necessary.

Personnel functions can become very irritating unless the foreman knows how to handle them properly. He must be able, within his section, to direct and supervise the selection, placement, induction, transfer, promotion, lay-off and discharge of workers. It is definitely part of his job to see that training is carried out well in his section. It is his responsibility to control overtime, remedy wage inequalities between workers on comparable jobs, and take an active part in setting up good incentive wage rates. These responsibilities may not consume much time in the average

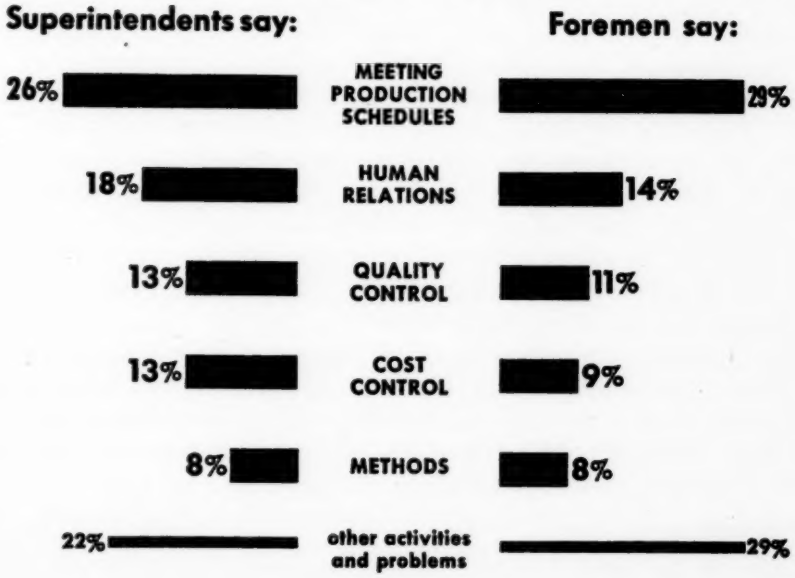
foreman's workday, but they are very important factors in any plant.

Tools, equipment and machines also demand the foreman's attention and energy. Such tasks as making certain that the proper tools are available for jobs in the work schedule and that spare parts are on hand in case of breakdown may be delegated to assistants, but they still need the foreman's supervision. Usually he inspects equipment and machines to insure that they fit the job to be done. It is his task also to adjust the workflow to the capacity of the machines in his section; and, in addition, the modern foreman must keep abreast of the latest developments in uses of tools and machines. Much of the knowledge required for the tasks under his heading is highly technical in nature.

Materials and supplies problems facing the foreman in his daily task include appraising special needs in his section and requisitioning to avoid critical shortages. He must make sure that the most suitable material is used for the job, and maintain sufficient checks on waste and breakage. In many of these tasks, he may enlist the help of capable assistants or staff services, but he must assume the major responsibility himself.

Fig. 2

SUPERVISION AND MANAGEMENT AGREE ON DIVISION OF AVERAGE FOREMAN'S WORKDAY



Working conditions frequently have to be considered by the foreman, to prevent inefficient layout and dangerous or unhealthy situations. The foreman usually investigates accidents and near-accidents personally to prevent possible recurrence by remedying the causes. Maintaining safe, healthful working conditions is a very important part of good foremanship.

The foreman also prepares special reports, keeps accurate records on production and constantly systematizes all reports and records as much as possible. The average foreman finds some of this paperwork irksome, yet it must be done if the job is to run smoothly.

HOW IMPORTANT?

As long as the foreman manages to perform his job effectively, many of the things he has to do may not seem to be very important, or to require much intelligence and training. Foremen who have spent long years on their jobs may have forgottn how very difficult certain parts of it were for them at first. The tendency in many foreman training programs has been to emphasize technical trade knowledge at the expense of human relations. It is usually granted that a prospective supervisor should have specialized training in materials, machines and methods, but it is often assumed that he will understand people merely because he is a human being himself.

Thus the study indicates clearly that foremen spend a great deal of energy on problems arising out of production schedules, quality control, costs, methods—and human relations, which involve effective motivation and direction of *people.* All the "Big Five" are very important in the average foreman's daily job.

In this survey, members of top management as well as the foremen were queried on the average foreman's usual workday. The very close agreement between the two groups on this question is shown by the graph in Figure 2, which represents the averages of the opinions within the groups. Superintendents of manufacturing departments agree that the foremen's "Big Five" actually are the five big areas in the foreman's job. Higher supervision, however, tends to put slightly greater emphasis on human relations than foremen do.

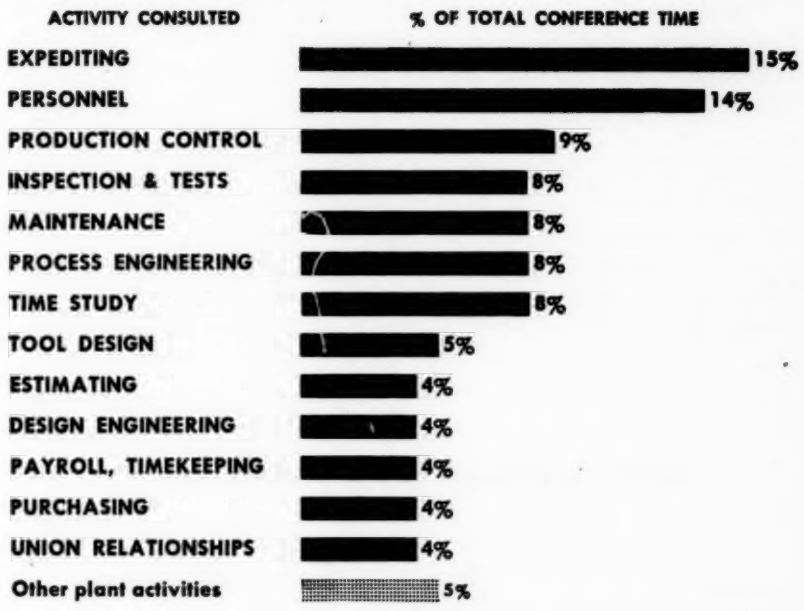
It is worth noting that this chart (Figure 2) represents a picture of our *present wartime economy,* in which production factors are high and cost problems are given less consideration than in normal times. Postwar situations may upset this relationship and force industry to give more attention to costs and methods.

NEW INSIGHT

One of the most valuable, though intangible, results of the survey

Fig. 3

DIVISION OF FOREMAN'S TOTAL CONFERENCE TIME SPENT WITH VARIOUS PLANT ACTIVITIES



was the insight gained into the average foreman's duties both by the foremen themselves and by higher management. The study helped to crystallize many previously vague interpretations and understandings of good foremanship.

CONSULTING PLANT SERVICES

What plant services does the foreman consult? When he works on production, human relations, quality, costs and methods, the foreman comes into close contact with many departments and services besides his own. Figure 3 shows the approximate time that most RCA foremen spend daily with other plant units. This graph, like the previous charts which represent the divisions of foreman's workday, tends to emphasize functions connected with the production of war materials. It shows vividly, however, that the foreman has many human relationships with persons outside of his own department, and that these relationships constitute a vital part

of his job. Friction is eliminated when foremen and staff specialists really understand one another.

ANSWERS PERTINENT TO TRAINING

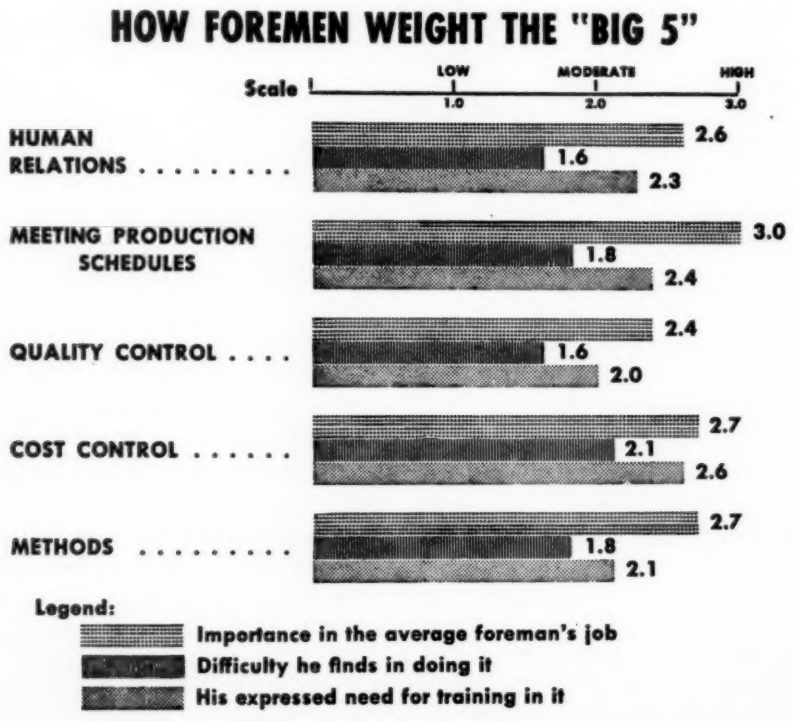
How important in meeting schedules are things the average foreman does? How difficult does he find these things to do? How much special training does he think he needs to do them?

The study gave objective answers to these three important questions—answers which are pertinent to training. The foremen interviewed were asked to weigh each item in the extensive breakdown list of the supervisor's job in terms of the three factors:

Importance in meeting production schedules
Difficulty experienced in performing
Foremen's need for training.

Weights were assigned on an arbitrary scale. A score of three was given if the item rated high, two if it were average, and one if it were low. The

Fig. 4


HOW FOREMEN WEIGHT THE "BIG 5"
Scale
LOW
MODERATE
HIGH
1.0
2.0
3.0
HUMAN RELATIONS 2.6 1.6 2.3
MEETING PRODUCTION SCHEDULES 3.0 1.8 2.4
QUALITY CONTROL 2.4 1.6 2.0
COST CONTROL 2.7 2.1 2.6
METHODS 2.7 1.8 2.1
Legend:
Importance in the average foreman's job
Difficulty he finds in doing it
His expressed need for training in it

values shown in Figure 4 represent a composite picture of the survey findings on these questions.

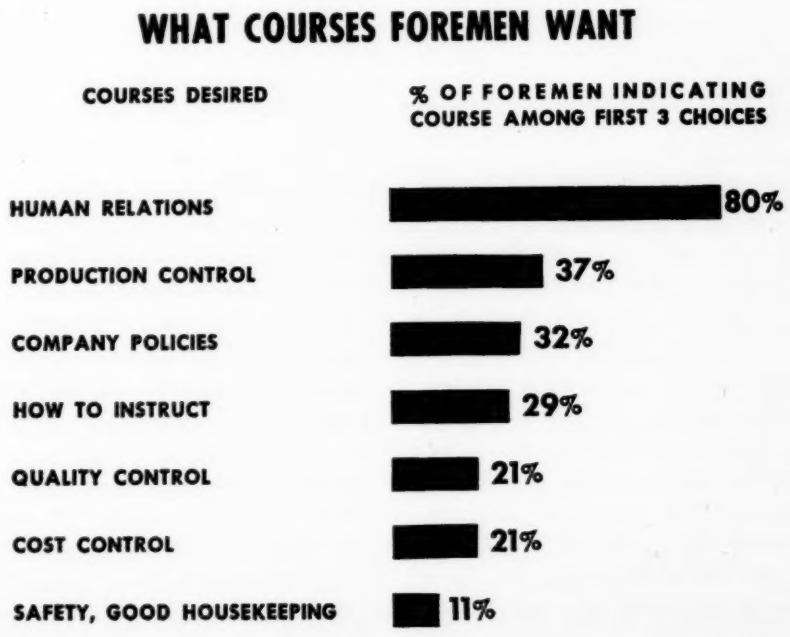
It is interesting to note that the expert foremen interviewed seem to feel that some of the most important phases of the average foreman's job may be relatively easy to do *once the foreman knows how to do them,* but that he needs special training in order to *learn how* to do them well. Findings point out that the average foreman probably needs most help on the parts of his job that might be overlooked if the *difficulty factor* were the only criterion in determining the content of a training program.

WHAT TOPICS DO FOREMEN WANT IN THEIR TRAINING PROGRAMS?

The foremen who were interviewed seemed to recognize their own training needs. Their preferences are shown graphically in Figure 5. The broad area of human relations was indicated by 80 per cent of them to be among their first three choices of topics desired. Techniques of production control, company policies and methods of instruction also showed up as important topics, although not so widely mentioned as human relations.

Data also revealed that in the area of human relations, the foremen

Fig. 5



place great emphasis on such things as taking an interest in the worker as an individual and understanding his desires, ambitions and needs. Good techniques of delegating responsibility and practical methods of preventing grievances *before* they arise were among the special training needs uncovered.

HOW DO FOREMEN WANT TO BE TRAINED?

Foremen say they want to be taught basic principles of psychology, engineering, manufacturing methods and processes, but they want these subjects thoroughly illustrated by well-selected cases and examples directly applicable to their daily work. They also like discussion which raises pertinent questions and gets practical answers. Visual aids, such as movies, are recognized as a definite help in the learning process. The most effective training program utilizes all these teaching methods in the most efficient combinations, according to the subject to be taught and the people who are to receive instruction. Foremen's preferences for teaching methods are shown in Figure 6.

While Figure 6 also indicates that foremen are practically all in agreement in preferring classes of one to two hours' duration, they would like their courses to be short and intensive, and given on a voluntary basis. Most foremen want simple tests to determine how well they are learning the material. On the question of homework, they are not so radically divided, the foremen who say "no" having a majority. *The final answer in all these matters depends on the nature of the course, the interests and desires of the participants, and the abilities of the instructor.*

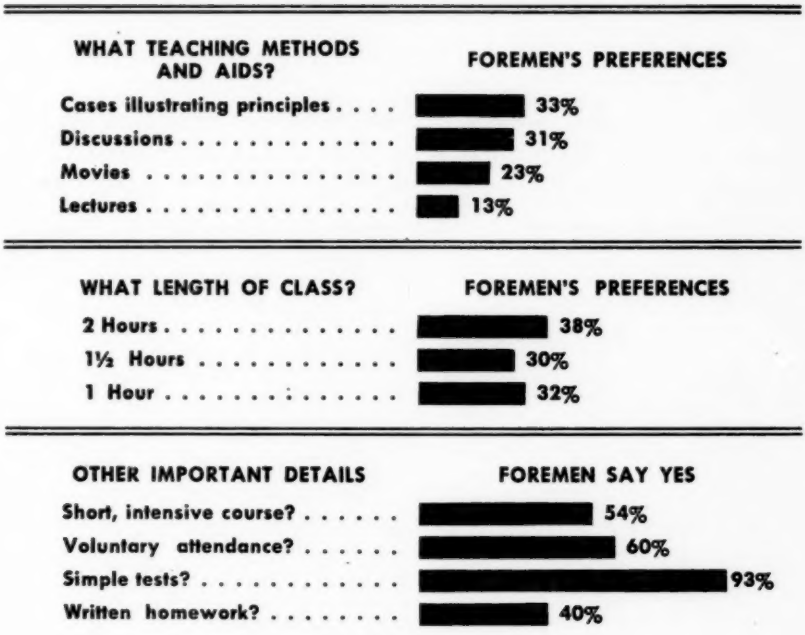
SOME CONCLUSIONS

The foreman's job has too often been considered to be largely a job of "telling people what to do and pushing them to do it." Some foremen may even have confined their work to these narrow limits of "bossing." The real job of the foreman, however, is much more complex and includes many more responsibilities. Through the extensive breakdown list, this survey has helped to clarify the specific areas in the average foreman's job in RCA plants. This was one of the initial purposes of the survey, but the findings also throw light on the problem of improving selection and training of prospective foremen.

It is worth noting that the study reveals data on the foreman's job which may be evaluated in terms of the intelligence needed to do the job well, the approximate school level at which the important phases of the job are taught, and the degree of emphasis which should be placed upon social factors and mechanical factors. The intelligence level neces-

Fig. 6

HOW FOREMEN WANT TRAINING


WHAT TEACHING METHODS AND AIDS?
FOREMEN'S PREFERENCES
Cases illustrating principles 33%
Discussions 31%
Movies 23%
Lectures 13%
WHAT LENGTH OF CLASS?
FOREMEN'S PREFERENCES
2 Hours 38%
1½ Hours 30%
1 Hour 32%
OTHER IMPORTANT DETAILS
FOREMEN SAY YES
Short, intensive course? 54%
Voluntary attendance? 60%
Simple tests? 93%
Written homework? 40%

sary for skilled foremanship is definitely *above average.* Most of the critical phases of the foreman's job are taught somewhere beyond average high school level. Finally, that job requires, in the average case, as much interest and ability in the psychological factors of human relations—of the most practical sort—as it does interest and ability in the scientific and mechanical side of things. These facts should be kept in mind in planning the selection and training of prospective supervisory personnel.

Teaching the foreman how to motivate and direct workmen, how to interpret company policies realistically and with finesse, how to utilize better methods so that production is carried on efficiently, and how to raise quality and reduce costs is the essence of a good supervisory development program. This survey indicates that management and supervision recognize these factors and are in accord about them. The day has passed when the foreman should hold his job merely because he has been a skilled mechanic a few years, because he has more seniority than other employees, or because he is recognized as a good fellow, or happens to know the right people. He needs—and wants—to be a skilled manager. He

is management at his level in the company, but this fact does not automatically endow him with the skills and knowledge necessary to perform management functions well. Give the foreman the know-how of skilled management. Let him have an active part in developing the program. When it fills his real needs, he will support it heartily.

Old Job or Cash?

THE case of a Dallas (Tex.) marine, a veteran in his thirties who got a medical discharge and came home to get his old job back only to have his former employer refuse and, instead, offer $1,500 in cash as a settlement, has aroused keen interest among employers and in Selective Service headquarters, War Manpower Commission, and Veterans' Administration.

The marine waived his legal right to reinstatement and accepted cash. Questions confronting employers are:

Does this leave them open to a shakedown racket by veterans?

Would cash settlements relieve employers of any further obligations?

Supposing veterans who really don't want their old jobs back collect cash from former employers and then find other jobs more to their liking? And supposing that no ex-serviceman can legally waive his statutory right to reemployment but can still take his case to court?

Waivers to disability rehabilitation after the last war were not held binding, and this may present a precedent. No federal official in Washington was willing to comment this week. No comment was expected until litigation results in a court decision.

—*Business Week* 6/24/44

Absenteeism Reduced

A plan for rewarding attendance has sharply reduced absenteeism at Servel, Inc., Evansville, Indiana, manufacturers of refrigeration, cooking, heating and air-conditioning equipment.

Any worker having no unexcused absences for six months is given a leather billfold and memorandum pad on which his name and record are inscribed. In addition, his name is placed on the department's honor roll. For a 12 months' record the worker receives a bar to be added to his Servel War Worker pin, and his name is placed on another departmental honor roll of more conspicuous merit. Each department competes for a monthly award plaque.

The plan became effective May 1, 1943. It gradually reduced absenteeism from 7.57 per cent in May to 4.15 per cent in November. The December rate of 6.13 per cent was attributable to prevalent illness. The "AWOL" or unexcused absence rate dropped from 60.1 per cent of the total absence rate for June to 42.2 per cent for December.

—*Dun's Review* 2/44

Speed the Day of Victory!—Buy More War Bonds

GETTING RESULTS IN "PROBLEM" INTERVIEWS

By R. L. THOMAS, Ph.D., and JOHN H. MUCHMORE
Vultee Field Division
Consolidated Vultee Aircraft Corporation

Interviewing an employee who is suffering from emotional stress is a task full of pitfalls for the personnel worker, the authors point out, but knowledge of a few simple psychological facts will enable him to avoid most of them. In this article they chart a course for the interviewer who is faced with a "problem" interview, listing a number of pointers which will help him to look behind the "symptoms" to the facts.

TO THOSE who have a genuine interest in human nature no field holds more interest than that of personal relations. In fact, it is hard to conceive of any activity which does not ultimately measure its success or failure by the effect it has on human lives. The very fact that the field is so basic in its scope, so fundamental in its application, increases the difficulties inherent in the adjustment problems.

To a counseling interviewer, who must probe behind the apparent into the misty realm of uncertainty, the obstacles seem almost insurmountable, until he realizes that despite individual differences, we all respond to certain fundamental laws of human reaction. The facts are simple in themselves, but a knowledge of them may well mean the difference between success and failure in the interview. They include: the fact that true motives are usually hidden and that what we see at first are only symptoms; the fact that there is always resistance to be nullified, but that a lessening of it usually occurs after the interview is felt to be ended; the fact that the solution may come through changed attitudes as well as changed conditions; and the fact that a human being values his sense of security and self-respect, and desires recognition. Finally, the interviewer should remember never to judge a case from the viewpoint of morality, and to reserve decision until all the details are known.

To gain sufficient understanding, we should learn, at least, the rudiments of human mental and emotional makeup. We must penetrate behind the mask by which the person hides from us, and even from himself to some extent. We must strip away falsity—but gently, gently, so as to leave him his self-respect. We should never let him know that we have seen anything unpleasant, unless it has a direct bearing on the case. Then we should speak of it without emotion, make it easy for him to talk about it.

Part of the interest of the interviewing job springs from the play of diverse personalities, but herein lies also a danger. We may be trapped into the fallacy of taking statements and emotional reactions at their face value, instead of weighing them objectively against our larger knowledge. For instance, we may think that a person who is angry *is really angry with us*

when, actually, we are only the momentary object of his attention. We may follow the natural desire to become angry also. But if we remember that anger and fear are always associated with each other, we can disregard his anger and search understandingly for the cause of his fear.

It is extremely important also to remember that the real reason for many reactions is hidden from the person himself, and that he is, therefore, often unable to help in the search. In this connection, it should be mentioned that valuable clues to underlying reasons can often be gained in the few moments immediately following the formal close of the interview. Believing his point already won or lost, a person often lets down his guard—perhaps with a brief sentence, spoken jestingly, which can be followed up by direct questioning. However, ask your questions casually—as though you were only showing a polite interest. In many cases this may be the turning point in the interview. If you can get a man past this point of resistance, he may carry on without hesitancy.

> . . . I have been satisfied with everything. The only reason that I am leaving the company is that I can go to work in the shipyards and get a journeyman's rating. That will pay me 15 cents an hour more than I get now. I will have a lot better chance to get somewhere. [Interviewer and interviewee rise and move a few steps toward the door.] You know, if that foreman had not lied to me about Sunday work, I probably would not have quit. . .

THE FUNDAMENTAL HUMAN DRIVES

Let us consider, generally, how and why people think and feel as they do. People "dress" their thoughts and actions, usually without being conscious of doing so. Fundamentally all people are subject to two basic drives: to preserve the race of which they are a part and to gain recognition from their fellow men—or, you may say, they seek security and satisfaction. Any interference that challenges these basic drives stirs them deeply.

Primitive man found the challenge to his sense of security largely physical in nature. His enemies were other men, wild beasts or exposure—enemies that could be seen and dealt with physically. Civilization has changed all this. Today man is fairly safe from his enemies because of the restraints imposed by law and morals, and the challenge is to his ambition, his ego or his pride. *His reactions are the same; it is only his ideas of what constitutes security that have changed.* But as his ideas of security have become larger and more complex, threats to its achievement and possibilities of frustration have become more numerous.

THE LAW OF ASSOCIATION

The interviewer should keep in mind that much of the reasoning most people do is on a fairly low plane, and that this "primitive reasoning"

is often influenced by the fundamental law of association. By process of this law we reason that if things look alike, they *are* alike; or that if they are in contact with each other, they are a part of each other. That is why, to the person you are interviewing, *you* are the company.

Another example of this type of reasoning is what the psychologist calls "displacement." Irritation felt over inadequacy or frustration is displaced by transferring it to something else, or more likely, to some*one* else. We find it extremely hard to blame ourselves for lack of achievement. If you are interviewing a man who is angry with his foreman, he may also be angry with you, even though he never saw you before. He has transferred his anger at the foreman to you because, to him, you both are "the company."

IMPORTANCE OF EXPLANATION

All transfer interviewers are faced, from time to time, with the problem of dealing with the person who desires a transfer because there are momentous implications of things about to happen in the department for which supervision has given no explanation, or with the one who is disturbed because he himself has been transferred without being given a reason.

The human mind has a tendency to feel dissatisfied about that which it cannot understand. If the true reasons have not been explained, the employee will have invented his own. These inventions, usually, will have no actual bearing on the case; they are merely the man's own inadequate method of meeting a situation in which he feels insecure. "I guess the company does not need me any more because I am too old, and they think if they push me around enough I will quit." Or, "they must have been dissatisfied with my work because they transferred me without giving me any reason."

To be drawn into a discussion of these inventions will get the interviewer nowhere. Instead he should let the employee "talk out" his emotion, then attack the basic problem by giving him a picture of the conditions leading up to the action, so that it will appear as a natural event under the circumstances. This plan may be followed also in a discussion *before* any action is taken—which is, of course, the ideal method of handling such a problem.

DEFENSE MECHANISMS

The counseling interviewer comes in contact mainly with people who are under emotional stress, people who in some way feel that their basic security has been attacked. Frequently this has made them over-sensitive, which means that they tend to overemphasize their inability to meet the difficulty, or to overemphasize the difficulty itself. Criticism by a supervisor

or fellow employee may result in despondency or exaggerated irritability. They may even interpret lack of praise as criticism. The more insecure and inferior they feel, the more devastating the effect of criticism, because it confirms their own feeling of inadequacy.

There are a number of methods by which a person defends himself from what he feels is an attack upon his pride. While most of them are inadequate and inaccurate, they are, nevertheless, the normal reactions of people under stress. Some of the more common ones will be briefly treated here.

A man may develop a hypercritical attitude, for instance, and actually hate the person who, he fears, is likely to attack his ego. Or, on the principle that "the best defense is a good offense," he may nag, find fault, or develop chronic irritability. Again, he may withdraw from what he believes is the source of his difficulty; that is, terminate his employment or seek transfer to another shift or department. We will all go to great lengths to avoid changing our attitudes.

> I have had trouble ever since I came to work here. I made several suggestions about improving things in the department, but nobody paid any attention to them. To hell with them—they can figure out their own problems. The foreman has it in for me and won't let me transfer. What else can I do but quit?

Another method sometimes used is negativism. The person will oppose all ideas and suggestions, will, in fact, do the opposite of what he is asked to do because in this way he can assert himself and be the one to make the decision. He may rationalize his problem and invent reasons for action which he himself knows are fallacious. This is a form of wishful thinking, and a method of avoiding the real problems which threaten his feeling of security.

Others turn into chronic worriers. Sometimes their ideas and feelings about their problem become ambivalent, and they entertain two totally opposing ideas, first one and then the other. They are in mental conflict, but *they are avoiding the necessity of making a decision.* If their problem is of long standing, the pattern of emotional tension originally centered about one person or one incident may come to embrace many ideas or persons associated with the original problem, perhaps only by being physically present. Dislike for a foreman becomes dislike for the company. Dislike for a fellow employee is extended to all associates.

> When I transferred into that department, the foreman told me definitely I would be on trial for 30 days. If he was satisfied with my work, I was to get $1.05 by the end of three months. He didn't do anything he said he would. If that is the way the company keeps its promises, I will have to get a job somewhere else.

There is also a converging process that works exactly in reverse: Many

irritations are focused upon one person or one event. When an extreme emotional reaction flares up over an irrelevant circumstance, it is likely that the repressed emotions of many prior incidents are converging upon the most recent happening.

> The foreman asked me if it was my sweater that had not been hung up according to the rules. Boy, I was so mad I burned. But, really, the thing that started it off was that two days ago I was off from work and when I filled out the green card giving the reason for my absence I marked "Personal Reasons." When I took it to the foreman he said, "What are the personal reasons?" Well, the fact they were marked "personal" seemed to be reason enough for him not to ask a question like that. Anyway, it was just the way he said it that irritated me. Well, the next day this sweater incident came up. I was still pretty much burned up about the absence incident, and when he jumped on me the two things were just too much so I blew my top.

NULLIFYING RESISTANCE

Some interviewers are more successful than others in getting information. It is apparent that resistance is present where there is a problem resulting in emotional stress, but that this resistance can be largely nullified by proper interviewing techniques. In order to neutralize resistance, the following fundamentals should be practiced by the interviewer until they become second nature:

1. The employee should be allowed ample opportunity to talk after he has been put at ease in the beginning of the interview. In itself, the opportunity to talk out his problem is of considerable therapeutic value. By putting his thoughts into words, he is compelled to think his problem through more completely; and often by the end of the discussion, he will have arrived apparently unaided at the obvious and desired solution.
2. The employee should not be hurried in telling his story. He will not want to tell you an experience that appears to place him in a bad light unless he is sure he will have enough time to eliminate the first impression. Also, to feel hurried creates tension and repression—two elements which the interviewer is attempting usually to overcome.
3. The interviewer should not attempt to judge the reaction of the employee. He should not moralize or argue. It does not matter whether the employee's solution is right or wrong, his problem remains. Our attitude should be one of open-mindedness—uninquisitive but exemplifying a sincere desire to hear all his thoughts and feelings so that the problem may be examined with him objectively.
4. The interviewer should never let the tone of his voice or the expression on his face betray that he is startled at or critical of what he hears.

5. The interviewer should suspend judgment and action until all the evidence is in.

ELIMINATING PRESSURE

Observed fundamentally, all personality problems that come before the interviewer are composed of pressure and resistance—that is, stress of circumstances which can be truly resisted by true reasoning, or inadequately resisted by the "primitive reasoning" which results in defensive mechanisms. From the therapeutic viewpoint there are two ways of eliminating stress, and one or the other should dispose of almost any problem satisfactorily:

1. *Removal.* That is, remove the source of stress or remove the employee from the source. This is usually accomplished by transfer of the employee from shift to shift or department to department.
2. *Mental adjustment,* or adjustment of the person's mind and outlook to the source of stress. This method, of course, requires one or more interviews in which the true cause of stress is determined, the pent-up emotions are released by allowing the individual to discuss the situation freely, and, finally, suggestions for more normal and healthful attitudes are made by the interviewer.

Which method is advisable depends, of course, upon the circumstances in each particular case, and in the last analysis, the choice must be based on the judgment of the interviewer. Probably the second method should be used wherever possible because the nullification of a personality problem is cumulatively beneficial, inasmuch as it interrupts the operation of the law of association. If we nip a budding maladjustment, there is no opportunity for the emotional tone to spread until it colors much of the employee's thinking.

In adjusting an employee's mind to a cause of stress by bringing about a more normal viewpoint, it is necessary to have him talk over, in detail, the irritating source. Many irritations are vague and indistinct; when they must be formulated clearly in words, there is a tendency for the emotion to lose force. After an employee has told his story, in detail, to an interested, open-minded listener, he may recognize spontaneously the immaturity of his reaction.

> . . . Now I guess I don't really want to quit at all. I have a boy in this war and I would like to help out. I'm only making 86 cents an hour here, and I've made lots more than that, but the money does not mean so much any more. But I'll be damned if I'll go back on that job and have that tow-motor operator laughing at me every day, and yelling out so everyone can hear and give me the laugh. Still, I know that door has to be kept closed all right, but I believe they are going to put an electric control on before very long, at that. That assistant foreman and foreman have been swell to me up to now—good men and swell fellows to work for . . .

Usually an attempt to force a change in point of view is useless. The employee must arrive at the proper decision after you have led him to dissipate his emotional reactions and reason about his problem. Through reasoning he faces facts as they really are, and makes his decision uninfluenced by fears or wishes. "Emotional thinking" distorts the facts and puts an inaccurate evaluation on them. Remember that emotion and reason cannot hold sway simultaneously in the human mind, and that emotion is the more primitive or fundamental of the two. You may be sure that you cannot reason with a man until the emotion has been completely disgorged.

To summarize:

1. Remember that the person is not conscious of the forces which make up his reactions.
2. Watch for leads in the unguarded moment at the close of the interview.
3. Don't be drawn into reacting to his mood. In other words, disregard the "symptoms" and search for the cause.
4. Let him preserve his self-respect. Put yourself in his place and give him the recognition you yourself would desire.
5. Avoid deciding whether he is right or wrong. A moral issue is not at stake—merely his reaction to stress.
6. Suspend judgment and action until all the evidence is in.

Physical Examination Clause in Union Agreement

THE Conference Board reports in a recent issue of *Management Record* a trend in collective bargaining which is of special interest because of the former attitude of most unions in regard to physical examinations. The particular clause cited was agreed upon at a collective bargaining conference involving a large group of airline mechanics. This clause stipulates:

(a) The company may, at least once a year, require any employee to pass a physical examination, made at the company's expense, by a medical examiner employed for that purpose by the company. The medical examiner shall supply such information as the company may require, and the company shall have the right to rely and act upon the opinion of such examiner.

(b) The company will use its best efforts to ameliorate such working conditions as are shown by these physical examinations directly to have caused physical disability.

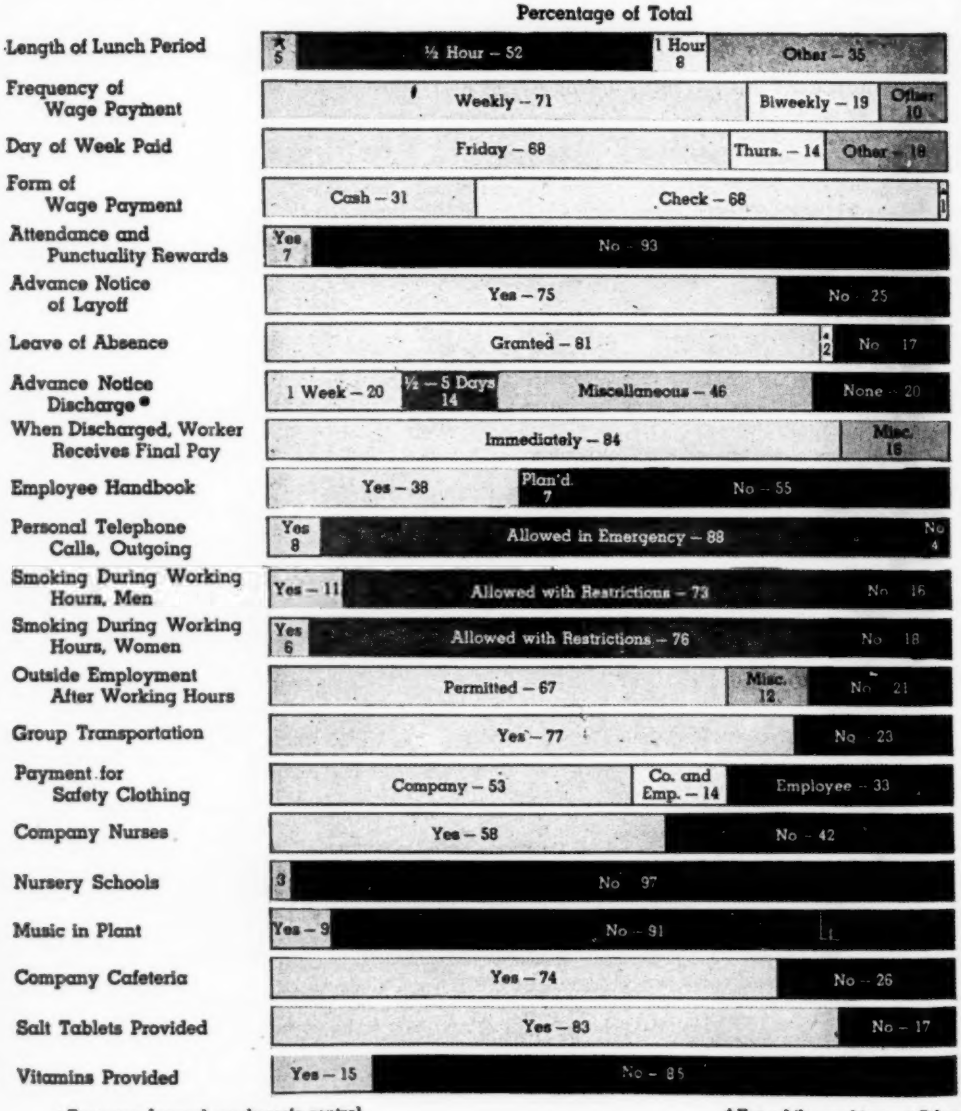
(c) Employees who have given long and faithful service and who have been unable to follow their occupations to advantage shall be given preference of such light work in their line as they are able to handle.

(d) No prospective employee shall be accepted for permanent employment, and no employee or former employee shall be accepted for reemployment, without passing a physical examination of similar purpose, similarly made, at the company's expense, when requested by the company.

—*News Items* 3/44

GUIDE TO PERSONNEL PRACTICES

A survey of 1,200 plants employing 2,500,000 workers indicates the degree to which companies are adhering (as of September, 1943) to old and new policies.



• For cause beyond employee's control

★Eat while working ▲Other

NOTE: The above chart, based on a survey made by the National Industrial Conference Board, New York, N. Y., was published as one of its "Road Maps of Industry."

METHODS FOR SPOTTING TRAINING NEEDS

By RANDOLPH S. DRIVER
Director, Training Division
The Atlantic Refining Company

"Training for training's sake" and haphazard training programs based on generalized objectives have been too prevalent in industry, declares Mr. Driver. Training should be aimed at specific objectives, which must be carefully analyzed to determine the most productive types of training. The author describes three methods of spotting training needs and illustrates graphically the applicability of each method. This article formed the basis of a lecture given during an industrial training course sponsored by Yale University and the New Haven YMCA.

MANY companies are facing such common problems today as absenteeism, high turnover, lost-time accidents, and waste. Some training directors believe that there are common solutions for these problems. This belief can be illustrated by the following incident: A training director had lunch with a friend at another plant and learned of the effective results of his friend's new induction program. Impressed by the fact that this program had reduced turnover in his friend's plant, he immediately decided that such a program would be of great value in his own organization. The results in his own plant, however, did not meet his expectations; indeed, the program had a detrimental effect on future training in his plant. Problems such as turnover usually do not have common causes and consequently do not have common solutions. It is necessary, therefore, to analyze these problems and determine their basic causes. The basic causes uncovered by analysis may be termed training needs, or "specific needs."

Determining these specific needs is frequently a difficult task, and some training directors question whether this extra work is essential. Training specialists have found, however, that unless training is based upon specific needs, several problems inevitably confront the training director.

Foremost and most common is the problem suggested by such statements from those who have been trained as "The training course was very interesting, but it did not apply to my job." In some instances, of course, this may be due to lack of understanding on the part of the trainee, but more often it constitutes a criticism of those who have planned the program.

Second, the determination of the content of the training plan will obviously be haphazard unless a prior determination of the objectives and specific needs has been made. Training directors who advocate intensive training plans which will produce the maximum effect with the least expenditure of time and effort on the part of all concerned cannot afford

to base their training on some generalized objective. Simply stated, it is the difference between a rifle-shot training plan in which the entire projectile hits the bull's-eye and a plan which is a blast from a shotgun, only part of which may be effective.

Third, those who have the interests of training at heart, both in this war emergency and in the peace to follow, realize that in a cost-conscious industry it will be necessary to prove the results of training efforts, regardless of whether this proof is in terms of dollars and cents or increased production. The only sound basis for such evaluation of training is a clear determination of the situation before training, or, in other words, specific needs.

Fourth, the longer any training director works in the field, the more enthusiastic he becomes and consequently the more desirous of increasing the amount of training in an organization. This tendency may lead him to organize training plans which will contribute little to the credit side of the balance sheet of his company, and which might be characterized as "training for training's sake." Probably this condition has been too prevalent in industry, and one of the few blessings war has brought is the realization that training should be designed to accomplish specific objectives rather than provide a general uplift.

Fifth, it must be realized that many persons in the line organization do not appreciate the importance of training. Such appreciation can be developed only by careful devised training plans which meet specific needs and produce desired results.

Doubtless there are other reasons why specific needs are important, but these have been selected as being most cogent to this discussion. Obviously, also, it is necessary to spot specific needs for all types of training—supervisory, non-supervisory, etc.

DIVERSIFIED APPROACHES DESIRABLE

Most executives would agree that a sound procedure would be to attack first those needs which are the most pressing. Each company, however, faces a somewhat different situation—some concerns are still in the process of expansion; others are in the process of retooling for new products; some are in a phase of consolidation of past expansion and organization for "the long pull"; and, finally, there is perhaps a small proportion whose business has been relatively unchanged in the past few years. It is possible that a single approach to the determination of the most pressing needs would suffice in all these situations; for the purpose of this discussion, however, I have subdivided such an over-all approach into three separate methods, each of which varies to some extent and probably differs more

in emphasis and degree than in kind. This subdivision has been made on the basis of meeting three relatively different situations within the same company (since no company is homogeneous) or of meeting varying situations in different companies which face diverse problems.

Recently I visited a company, one division of which was manufacturing its normal peacetime product, the second division of which was producing an entirely different product from that to which its energies had been directed two years ago, and a third division of which was in the process of conversion from one wartime product to another. While the proverbial "blind man" could spot needs for training in the third division and perhaps in the second, the problem of spotting needs for training in the first division was difficult. Wherever, as in this first division, training needs exist but to a lesser degree, they may prove hard to discover.

DETERMINING OBVIOUS NEEDS

The first of the methods for spotting needs which I shall describe is designed to determine specific needs where the general problems are obvious to everyone. For example, when the Armstrong Cork Company transferred part of its working force from the manufacture of flooring material to that of aircraft subassemblies, everyone in the plant realized that retraining of the workforce was essential. Consequently, specific needs were not necessary to develop support of the line organization for training, but they had to be determined in order to ascertain the most productive types of training. Determination of needs in such situations may be carried out by the following steps:

1. A careful job analysis of all positions should be undertaken and job descriptions written. For this purpose it is questionable whether the type of job analysis employed in wage determination will be adequate. Jobs which require special skills, dexterities, or other unusual abilities may require more detailed analysis if the training is to be planned carefully and have maximum effectiveness. The job psychograph method of job analysis, described by Morris Viteles in his text, *Industrial Psychology*,* and the job breakdown approach of Training Within Industry provide excellent methods of analyzing complex jobs.

2. After completion of the job analysis, standards of performance for each job should be established or estimated wherever possible. Such standards of performance have operating significance, of course, but from a training viewpoint they serve only to help determine the extent of training required and are not essential in determining whether training is necessary.

* W. W. Norton & Company, Inc., New York, 1932.

3. The training director must then determine, or have determined for him, the present skills of those to be trained. Much time can be lost and interest dissipated by training individuals when training is not needed.

4. Trainees can then be allocated for training on the basis of present skills and similarity of the elements of job content.

AN INEFFICIENT APPROACH

Without elaborating upon this method, I should like to emphasize the fact that even where the problem is obvious to all, it is necessary to determine specific needs if successful training is to be carried out. It is not enough (as was discovered by one plant with which I have had contact) merely to say, "Our people need to understand the use of certain measuring devices and the operation of certain machine tools." In this instance, the task of pre-training new individuals was delegated to a vocational school, which did a creditable job under severe handicaps. The results, however, were extremely unsatisfactory, because the types of machine tools in the school differed from those in the plant, and also because the school taught measurements to the 10/1000 of an inch, while in the plant the majority of measurements were made with calipers. In this plant the training director had made no genuine effort to determine what each employee had to know—i.e., job analyses and standards were not completed. He assumed that even a generalized knowledge of machine shop practice would be helpful. Even if the training had been more productive in this situation, the approach was inefficient since the time required to acquire a generalized knowledge was far out of proportion to its value.

In this method, therefore, the determination of specific needs is not essential to justify the necessity for training, but it is essential if the content of the training plan is to be properly planned.

TRAINING SOLUTIONS TO OPERATING PROBLEMS

A second method for spotting needs should be resorted to in those situations where recognizable operating problems exist. These problems generally are not so obvious as those referred to previously, and frequently the line organization may not recognize that they have training solutions. I recall a number of instances where such an approach has been of value. The following is typical: In a West Coast plant, the training director asked an assistant superintendent, "What particular operating problem is bothering you now?" The problem of the moment proved to be the need for better planning and follow-through of detail by the supervisory organization. The training director analyzed this problem to determine the specific needs for training. This analysis was carried out

FIGURE 1

STEP I: DEVELOPMENT OF SPECIFIC NEEDS

Specific Needs

1. Don't check to see sufficient ingredients on hand, make nec. arrangements
2. Don't check to see if equipment for introducing ingredients is ready
3. Don't check to see if processing and filling equipment is in order & timed
4. Don't give personnel requirement in time
5. Don't check minor equipment—i.e., scales, knives, dishpans, etc.
6. Don't follow thru on routine parts of job after operation is started
7. Don't ask for advice until too late
8. Don't complete arrangements for incidenal supplies
9. Don't appreciate value of equipment and cost of delay

	PREPARE CHECK LIST	READ PROCESS CHART	PERSONNEL PROCEDURE	USE CHECK LIST	APPRECIATION OF VALUES *	J.M.T.		MANAGEMENT	
Don't check ingredients from formula in terms of period requirements	✓			✓					
Don't check equipment 2 & 3	✓	✓		✓					
Don't give personnel requirements	✓	✓	✓	✓					
Don't follow through on routine parts of job	✓			✓	✓				*Appreciation of values should come after J.R.T.
Don't ask for advice				✓					
Don't arrange for incidental supplies	✓			✓		✓			
Don't check minor equipment	✓			✓		✓			
Don't appreciate values and costs					✓				

Combine into "Production Control for Supervisors." (Should come after JMT.)

on a special form (see Figure 1), and three methods of ascertaining training needs were employed: first, discussion with all parties concerned; second, analysis of existing records; and third, anticipation of problems that may arise in the near future. This method had been suggested to him in a series of meetings which the writer conducted on the West Coast for Training Within Industry.

In this approach the problem is taken as a starting point, and every possible cause (specific need) of this particular problem is developed without any predetermined training plan in mind. When all recognizable specific needs have been determined, analysis of this data will ordinarily lead to the conclusion that a number of different training plans are necessary to solve this problem. Some of these plans may already have been developed either in the company or elsewhere; others will have to be devised to meet the particular situation. Note at the extreme right side of the chart a column indicating that the solution of some aspects of this problem are outside the scope of training. These facts, of course, should be referred to the appropriate members of management for their consideration. The chart reproduced here has been filled out in the most simple manner; the code used can be elaborated to any extent deemed desirable.

Obviously, the content of all the training plans will be developed directly from the list of needs in the left-hand column. If this list of needs has been determined carefully and is specific in nature, the content of the training plans can be formulated directly from it; otherwise, an additional job analysis of some of the duties or requirements may be called for.

FUNDAMENTAL DIFFERENCE IN METHODS

Fundamentally, this second method differs from the first in that in the first method specific jobs for which training is required are recognized. In this method, starting as we do with an operating problem, the specific needs underlying this problem may lead to training of individuals in jobs far removed from the particular situation in which the problem has arisen. In many instances it may lead to other departments or to a shift of emphasis from non-supervisory to supervisory jobs. This method works particularly well in companies which have recognizable operating problems, such as high turnover, absenteeism, accidents, waste, and numerous grievances.

In some companies, however, or in some departments of a company, such problems are not readily discernible. The operation of these particular companies or departments is more uniform; and while training men recognize that well-designed training plans could be of value, it is

difficult to create this same impression in the minds of the line organization, because in their opinion no problems which are worthy of attention exist. The reason they do not recognize such problems may lie in the uniform character of the operation. In such instances, there is a third method for spotting needs. Here, in contrast to the first of the three methods, the purpose of spotting needs is twofold: first, to determine the content of the training plans; and second, perhaps even more important, to focus attention on the necessity for training.

In this method, the first step again is a thorough job analysis; and in many instances this will involve an analysis of all key jobs, since there is no easy way of determining the individual incumbents who need assistance through training. The second step is to develop, if they are not already in existence, standards of performance for these jobs. The third step is to compare the individuals' present performance with the standards.

This method, as stated above, appears relatively simple and completely logical. I question, however, that many industries have sufficient data at hand or even sufficient opportunity for collecting data to make this method practicable as an over-all procedure.

PROBLEMS TO BE SURMOUNTED

Two major problems require solution before this method can be widely employed. One is determination of the standards of performance which are essential in order to justify the need of training. With certain routine jobs, where production can be determined in number of pieces produced per hour, this is a reasonably simple matter. Thinking in terms of supervisory training, however, the difficulty of determining standards of performance may often seem insurmountable. Time study and other procedures of the industrial engineer are of less value here, and we are forced to rely to an increasing extent upon judgment and opinion. The second problem, the evaluation of the individual incumbents, is also complicated. In certain routine jobs, this presents little or no difficulty, but such jobs are in the minority and in general of little importance to the company as a whole. Individual evaluation in jobs which are non-routine is generally now carried out under the name of merit rating. Such ratings, while undoubtedly of value, are, in the final analysis, merely systematized opinion.

Thus in this method, the crux of which is the determination of definite standards of performance and the comparison of individuals with these standards, we are hindered by lack of techniques sufficiently valid to provide reasonably accurate conclusions. In certain old-line, well-established companies, existing techniques may be of more assistance. In newer

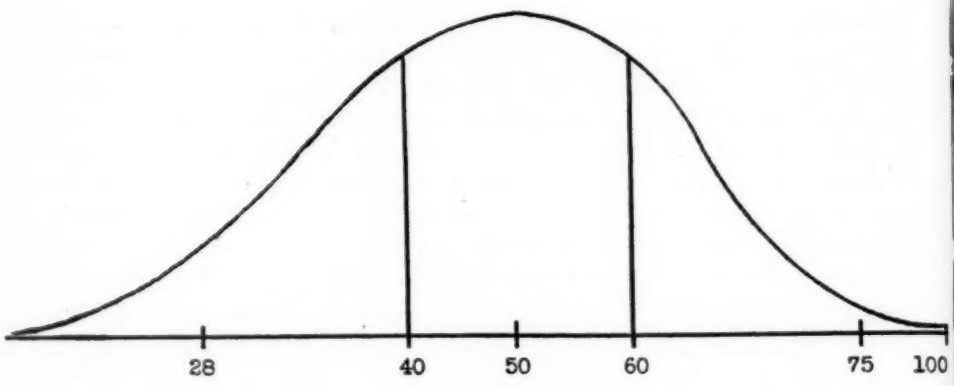


FIGURE 2

companies without a history of merit rating or well-defined operating standards, training must be deferred under Method 3 until they have been established. This in itself is a complicated and time-consuming job. Fortunately, much can be accomplished through utilization of Methods 1 and 2.

APPLICABILITY OF METHODS

The applicability of the various methods can be illustrated graphically by reference to Figure 2. Efficiency is plotted on the horizontal axis, and number of problems in which training might be of assistance on the vertical axis. The 40 per cent to 60 per cent band is placed slightly above the middle of the curve and is based on statements of industrial engineers that without incentive the efficiency of groups of employees ranges between these figures. The 28 per cent point is set as an estimate of the efficiency of employees after preliminary training in new situations. Method 1, therefore, would be applicable in the extreme left-hand area, Method 2 in the second area between 28 per cent and 40 per cent, and Method 3 between 40 per cent and 75 per cent, with greatest applicability between 40 per cent and 60 per cent.

As we advance from the expansion period through the period of consolidation of previous expansion to a period of long-pull operation, the future of training will, I believe, depend upon development of the third method. In such circumstances, the first method becomes less and less valuable, the second method wanes in applicability, and we are forced to rely on the third method. I wonder if the decline in training during the depression years was not due in part to our lack of ability to apply this third method successfully.

The problem of determining specific needs requires that someone in the organization be constantly alert for evidences of these needs. One method of attacking this problem is to organize a large training staff, whose primary function would be to contact the line organization and determine areas in which training might be of assistance. Such a procedure involves costly overhead, but it may be justifiable in some situations. The second approach to this problem is to attempt to decentralize the spotting of needs by developing in the line organization a consciousness of what training can accomplish and what types of problems training can most effectively solve. Such decentralization might be achieved informally through frequent contacts with key people in the line organization, or more formally through group meetings designed to clarify the objectives and position of the training division. Whatever the approach to this problem, however, it should be emphasized that spotting of needs is the keystone upon which all training should be built, and that widespread coverage in this activity is essential if training is to be of maximum assistance to the organization.

In outlining these methods of spotting needs, I have attempted to stress certain problems which in my opinion are retarding industrial training. These problems are: (1) the determination of standards of successful performance; (2) the evaluation of the performance of employees occupying certain jobs; (3) evaluation of the results of training (the solution of which is in part dependent upon the solution of the first two problems). Fortunately, training directors now are able to utilize the first two methods of spotting needs in so many situations that they are not apt to be short of work. They must face the fact, however, that as their organizations develop, it will be necessary to evolve methods to meet the changing situations.

Training directors must discard their traditional position of educational advisers to individual plants, and attack these problems from a research point of view. I believe that the ultimate future of training rests upon adoption of the concept of a training director as a training engineer whose primary function is not to educate the organization but to assist the line organization in the solution of its problems through training. Only through an engineering approach of this sort will training men be able to evaluate their contributions to the welfare of the organization. Unless such an evaluation is carried out, even a mild depression will serve to erase the gains training has made in the war period.

Speed the Day of Victory!—Buy More War Bonds

A Post-Exit Questionnaire

By FRANK LIVINGSTON
Liggett Drug Company

THE retail distributive field in which stores and depots are likely to be separated from the personnel office has presented a problem to those who recognize the value of an exit interview.

In some cases—a very few, in comparison to the labor turnover—it has been possible for us to conduct an exit interview at the personnel level after efforts toward retention or adjustment have been tried at the store manager's level, and at that of the district manager or superintendent. When the potential terminee has progressed through these levels, it is usually possible to induce him to come in for an exit interview in the personnel department.

There are, however, a large number of terminations upon which we can have no exit interview. For that reason we entered the field with a post-exit questionnaire.

QUESTIONS ASKED

In the body of the form letter, we solicit the terminee's cooperation and further state, "We consider the reasons why you left as vital to us in our studies of employee relations."

The questions asked on the back of the form are:

1. Did you like your job with Liggett's?
2. What did you particularly like about it?
3. What did you dislike about it?
4. Who trained you for your work?
5. Do you believe you were given enough training?
6. How were the other employees to work with?
7. Did your supervisor treat you courteously?
8. What do you think of Liggett's as a place to work?
9. Do you have any suggestions for improving our methods?
10. Would you be interested in returning to work? If so, when? Any further comments you wish to make?

We mailed the post-exit questionnaire out to the terminees with a stamped, self-addressed envelope, hopeful that the forms would be answered in such a way that we would be able to establish statistical studies to assist management in ascertaining the causes of its labor turnover.

So far, we have received some interesting as well as amusing comments. For example:

Answers to Number 2: "Neatness and employer's respect and consideration for his employees." "Very broadening, interesting." "Five-day week and 40 hours."

Answers to Number 3: "The customers." "Anyone could have done what I did—that's no man's job." "The shortage of help kept me from doing my work well—trying to work in all departments." "Too many idle hours (I worked from 6 to 12 nights)."

SOME ADVANTAGES

One surprising effect of the use of the form is the appreciative reaction of the terminees who are called upon to comment on their experiences with us. While it is true that not all the forms have been returned, quite a few have been, and in many cases, the ex-employees have added "Thank you."

Moreover, although not designed to accomplish a salvage job, the form is doing just that in many instances. One satisfactory former employee reported to the personnel department, form in hand, and ready to return to work—she had previously quit to stay home. Others wrote asking when they could report for

work, or answered number 10: "will be back in two weeks"; "will take part time, three nights a week"; "any time"; "whenever I am needed."

It is obvious that the form has many limitations, but the responses, the salvage job, and the remedial suggestions that it enables the personnel department to offer top management make it well worth while. It is also possible that the form could be used in other than distributive fields as a follow-up on personally conducted exit interviews, to find out whether or not the employee's reason for terminating was given correctly at the employment interviewer's level.

Unfair Labor Practices and Collective Bargaining

STUDIES by the National Labor Relations Board reveal collective bargaining in effect in about two-thirds of several groups of cases in which employers' unfair labor practices have been eliminated through Board action. The success of the informal procedures of the Board is indicated by the fact that, where compliance with the National Labor Relations Act was achieved by informal adjustment in the regional offices, without formal action, collective bargaining followed in a somewhat larger proportion of the cases than where formal action by the Board and the courts was necessary. Later charges of violation, which were upheld upon investigation, have occurred in only small minorities of these cases, not more than 10 per cent for any group studied. As a whole, however, cases which went through formal procedures had somewhat fewer later violations than did the cases informally adjusted.

A study of the unfair-labor-practice cases closed in six regional offices during 1941 and 1942 revealed collective bargaining in effect in 1943 in 67 per cent of the cases closed on adjustment, and in 60 per cent of those closed after formal decisions of the Board and the courts. The collective bargaining relationship in the majority of cases involved the union which filed the original charge. Later charges of violation of the Act were filed and had been upheld or were still pending in 10.0 per cent of the cases informally adjusted, but in only 4.3 per cent of the cases closed after formal action.

Examination of the results of disestablishment of company-dominated unions disclosed that, for all the cases in which the Board ordered disestablishment in the period July 1, 1940-June 30, 1942, collective bargaining was in effect in 1943 in 68.2 per cent of those closed on compliance. In a random sample of 100 disestablishments by informal adjustment during the period, collective bargaining with bona fide unions had been established in 70 per cent of the cases.

It is significant that, in these situations, where there had been unfair labor practices and compliance with the Act had been achieved through Board procedures, the coverage by collective bargaining contracts was more extensive than in general. It is estimated that nearly three-fourths of the employees in the units involved in these cases are included under collective bargaining relationships. The U. S. Bureau of Labor Statistics estimated the coverage of collective bargaining agreements in January, 1944, as almost 45 per cent of all workers in private industry, and 60 per cent of the wage earners in manufacturing.

—EMILY CLARK BROWN in *Monthly Labor Review* 6/44

Speed the Day of Victory!—Buy More War Bonds

VISUAL FUNCTIONS AS RELATED TO ACCIDENT-PRONENESS*

By N. FRANK STUMP
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Findings of experiments conducted by Dr. Stump indicate that definite relationships exist between various degrees of injury in industrial accidents and measured visual functions. This paper describes the procedure used and the results obtained, and indicates an area in which further study may increase the possibility of predicting accident-proneness through pre-employment testing.

THE search for factors which may cause industrial injuries has gone on during the past 30 years. Some investigations have been made to show relationships between injuries and the following factors: (1) fatigue;[1] (2) illumination;[2] (3) rate of production;[3] (4) length of service;[4, 5] (5) emotional cycles;[6] (6) mental ability;[7] (7) perceptual and muscular speed;[8, 9, 10] (8) personal protection;[11] and many others. The relationship of vision to industrial injuries, however, has received serious attention only recently. Correlates between visual status and severity of industrial accidents are yet to be discovered. If the smallest iota of light can be thrown on this difficult problem, the effort and time are well expended.

In the experimental work described here, three groups of employees for whom past experience with regard to injuries was a matter of record were selected. The facts on injuries, continuously collected at the first aid building but considered here only for a period of one year, determined the differences between the three groups. The relationships between visual functions and industrial accidents were studied by measuring eye performance in the following groups:

1. Employees who experienced one or more serious injuries in the past 12 months.
2. Employees with a high frequency of minor injuries—no serious injuries but an accumulation of minor ones.

* The author wishes to express thanks to Forrest E. Richmond, works manager, and James P. Beasley, personnel manager, Rome Division, Revere Copper and Brass Incorporated, for making this investigation possible.

[1] J. Goldmark, *Fatigue and Efficiency*, Russell Sage Foundation, New York, 1912, p. 72.
[2] A. Stephenson, "Accidents in Industry," *Journal of National Institute of Industrial Psychology*, 3 (1926), p. 196.
[3] "Two Contributions to the Study of Accident Causation," *Report No. 19*, Industrial Fatigue Research Board, p. 36.
[4] B. Fisher, *Mental Causes of Accidents*, Houghton Mifflin Company, New York, 1922, p. 34.
[5] G. Shrosbree, "Relation of Accident Proneness to Length of Service," *Industrial Welfare*, 1933, pp. 7-8.
[6] R. B. Hersey, "Emotional Factors in Accidents," *Personnel Journal*, 15 (1936), pp. 59-65.
[7] E. G. Chambers, "A Preliminary Inquiry into the Part Played by Character and Temperament in Accident Causation," *Journal of Mental Science*, 85 (1939), pp. 115-118.
[8] C. A. Drake, "Accident-Proneness: A Hypothesis," *Character and Personality*, 8 (1940), pp. 335-341.
[9] ——*Personnel Selection by Standard Job Tests*, McGraw-Hill Book Company, New York, 1942, pp. 113-122.
[10] ——"Detecting the Accident-Prone Worker," PERSONNEL, 18 (1942), pp. 276-281.
[11] H. Guilbert, "No One Enters This Plant Without Goggles," *Factory Management and Maintenance*, 96 (1938), pp. 83-85.

3. Injury-free employees—extremely minor scratches and burns not reported to the first aid room.

CHARACTERISTICS OF THE EXPERIMENTAL GROUPS AT VARIOUS LEVELS OF SAFETY

To eliminate guesswork and find evidence for significant differences among the experimental groups, the three were subjected to statistical analysis with regard to age, education, ratings on safety habits, and general merit ratings, the purpose being to determine the suitability of these groups for continued experimental treatment. Justification of this procedure is well stated by Dr. Hedwig S. Kuhn. In speaking of new developments relative to the solution of visual problems in modern industry, she has indicated this viewpoint by saying that problems of vision have been clarified "through the application of basic statistical, analytical methods to the problems involved. It has been amazing to discover how much more effectively one can escape a dead end by careful mathematical checking."[12]

Since age has been found to be related to *convergence* and *divergence*,[13] and these factors seem to affect accident-proneness, very significant differences between the three groups with regard to age were considered undesirable. This condition was satisfactorily met.

Education, as determined by the number of school grades completed, is widely considered as a fair indication of general ability. In turn, general ability is related to perception. Since some writers have held that various levels of perception are significant factors in the severity of accidents, it was thought desirable to prove that all three groups were equal, on the average, in education. This proof was secured statistically.

Even though the groups were selected on degree of safety experienced as recorded in the first aid building, verification by foremen's judgments of the degree to which each group obeyed safety rules was desired. For this reason, foremen's ratings on eight items of the progress rating report and ratings on the single item, safety habits, were studied. It was proved that the average ratings of the accident-free group were significantly more satisfactory than those of the other two.

Then, before the three groups could be compared on equitable terms, the hazards of each man's job had to be considered. The safety engineer examined the groups, and concluded that, in general, the hazardous jobs were fairly well distributed among the three—i.e., one group did not have an appreciably higher number of men working on hazardous jobs than did another.

Thus this preliminary investigation revealed that the three groups

[12] Hedwig S. Kuhn, "Some Visual Problems in Modern Industry," *Illinois Medical Journal*, 82 (1942).
[13] Joseph Tiffin, *Industrial Psychology*, Prentice-Hall, Inc., New York, p. 143.

were not significantly different, on the average, with regard to age, educational status, or job hazards. Foremen's reports, however, showed that the accident-free group was significantly superior to the serious-injury group and to the high-frequency-of-minor-injury group in safety habits. On the total items of the progress rating report, the accident-free group was very significantly superior to the high-frequency group.

VARIETY OF VISUAL FUNCTIONS PRESENT IN EMPLOYEES ON THREE LEVELS OF SAFETY

Visual functions were measured by means of the Ortho-Rater.[14] This instrument determines eye performance on 12 separate tests; seven measuring various functions of *distant* vision; and five, those of *near* vision. The far-vision tests were administered at an optical distance of 20 feet; reactions on the near-vision tests were secured at a visual distance of 13 inches. The instructions given the subjects during the administration of the tests and the illumination of the stimuli were held constant throughout.

Though 12 visual tests were administered, the study of data was not limited to 12 comparisons among the three groups. It is obvious that a difference between visual functions at *far* and *near* distances may be more significant data for industry than far or near scores treated separately. The same reasoning may apply to tests which measure posture of the convergence[15] of the eyes.

At distant vision the following functions were measured: (1) acuity—both eyes; (2) acuity—right eye; (3) acuity—left eye; (4) vertical phoria[15]—far; (5) lateral phoria—far; (6) color; and (7) depth. At near vision the following visual functions were scaled: (1) acuity—both eyes; (2) acuity—right; (3) acuity—left; (4) vertical phoria; and (5) lateral phoria.

The primary purpose of this experiment was to study the visual functions of the persons who had been classified in each of the three accident groups on the basis of past experience. To find certain visual functions significantly better, on the average, for one group than for another would be the first step in discovering relationships for possible prediction of the accident classification into which new employees may be fitted. And it is this prediction factor which makes data on accident-proneness valuable to industry, since it enables the employment department to assign those

[14] The Bausch and Lomb Optical Company, Rochester, N. Y.

[15] "Under certain testing conditions, which eliminate the necessity for the eyes to converge on a single point, the eyes assume a posture that may converge or diverge from that required in normal seeing at the test distance. Such postures (called 'phorias' in clinical terminology) are measured in terms of angular deviation from the posture normally required for that distance. The deviation may be lateral or vertical and is measured separately in each direction." Tiffin, *op. cit.* p. 132.

who show signs of being accident-prone to jobs free of hazards, and those who seem accident-free to the more hazardous jobs.

Only the trends of visual functions in relationship to actual levels of safety can be considered here. Reasons for relationships must, of necessity, come after further experimental work, as is often the case in the study of scientific phenomena. While many relationships between electricity and useful functions are known, the "why" is generally obscured. This is especially true of the newer approaches, as in the field of electronics.

COMPARISON OF THE VISUAL FUNCTIONS FOR SERIOUS-INJURY GROUP AND INJURY-FREE GROUP

A general inspection of the data indicates significantly higher visual ratings on some tests for the injury-free group than for the serious-injury group. In the right-eye far-vision acuity test, a very significant difference, on the average, in favor of the injury-free (I.F.) group was secured as compared to the serious-injury (S.I.) group. In fact, the critical ratio[16] between the I.F. and the S.I. group was larger than any the writer has yet found. This shows without doubt, so far as the data thus far collected are concerned, that visual right-eye far-vision acuity is a measure which may help point out industrial employees who may be rated eventually among the S.I. group.

As was stated above, the fact that certain relationships are proved to exist between visual functions and various degrees of accident-proneness are contributions in themselves. The writer, however, wishes to set up a hypothesis for this relationship between right-eye far-vision acuity which further experimental work may verify.

It is a well-established fact that one eye normally dominates the other. "In the right-eyed person the right eye contributes practically all of the picture, in the left-eyed person the left eye. In the former, the left eye merely functions in a subservient fashion to add accessory information to the view afforded by the dominant right eye."[17] "As the eyes move from object to object, the dominant one is assumed to lead the way while the non-dominant quickly follows."[18]

Though it is agreed that individuals are "right-eyed" or "left-eyed," the preponderance of right-eye over left-eye dominance is of considerable concern. Research has shown that "eye dominance is established in about 80 per cent of individuals by the end of their third year of age. In almost every case it comes before school age. Generally speaking, seven out of 10

[16] The size of the critical ratio determines whether or not differences between the means or averages of the three groups are significant, fairly significant, or not significant at all.
[17] Wayland F. Vaughan, *General Psychology* (Revised), Doubleday, Doran & Company, Inc., New York, 1939.
[18] Glenn D. Higginson, *Psychology*, The Macmillin Company, New York, 1936, p. 156.

school children show right-eye dominance. Approximately 3 per cent may show ambiguous dominance for many years or throughout life."[19]

When these facts are combined, the dominance of the right eye may show its importance where visual acuity and accuracy of response to what is seen in industrially hazardous situations are considered.

The critical ratio shows that a difference is fairly certain to exist in favor of the I.F. group over the S.I. group, with regard to "worse"[20] eye near-vision acuity—i.e., the "worse" eye is significantly poorer in acuity for the serious-injury group than for the injury-free group. So visual acuity again enters the picture.

COMPARISON OF VISAL FUNCTIONS FOR THE HIGH-FREQUENCY-OF-MINOR-INJURIES AND THE INJURY-FREE GROUP

From the standpoint of prediction of accident-proneness, the high-frequency-of-minor-injury (H.F.M.I.) group is just as important as the (S.I.) group. It is commonly agreed that the H.F.M.I. group possesses a large percentage of potentially serious-injury individuals; for if an individual continues to have an accumulation of minor injuries, he will probably have a serious injury eventually. Consequently, it is not at all surprising to find that a much larger number of visual tests show a significant difference in scores in favor of the I.F. group over the H.F.M.I. group than over the S.I. group.

Very significant differences in scores favor the I.F. group over the H.F.M.I. group on right-eye far-vision acuity. The I.F. group also made significantly higher scores than the H.F.M.I. on the far-vision lateral phoria test and on depth.

When the lateral phoria far-vision scores are subtracted from the lateral phoria near-vision scores, there is virtually a significantly higher *difference* score in favor of the I.F. group over the H.F.M.I. group.

TESTS BECOME AID TO BETTERMENT OF HUMAN RELATIONSHIPS BETWEEN MANAGEMENT AND EMPLOYEES

Management sometimes anticipates a feeling of resentment among employees who are asked to cooperate in any testing program. For this reason each employee who took the visual tests was requested to answer a few questions after the eye tests were administered. The writer is pleased to report that considerable interest and enthusiasm and excellent cooperation were present throughout. While the importance of these intangible qualities is often completely overlooked in a scientific experiment, they always constitute significant data. The writer (who acted as the experimenter) assuredly received the impression that employees are in-

[19] Ibid., p. 156.
[20] "Worse" eye means the lower of the two scores when the right eye and left eye were tested separately.

tensely interested in discovering as many facts as possible about themselves. Their reactions show that the majority are willing to face the truth even though it may not always be satisfying. Any suggestions which help a person to improve his physical condition seem endlessly fascinating to him. The following facts present a tabulation of employee reactions to specific questions:

1. *Did you enjoy the eye-performance test?*
   Very much – 6%. Yes – 88%. Indefinite – 3%. No response requested – 3%.
2. *If your score on this eye machine were discussed with you after it is ready, would you be interested?*
   Very interested–6%. Yes–82%. No response–9%. No response requested–3%.
3. *What do you think of this machine? Does it seem to give information about your eyes which would be helpful?*
   Good machine–43%. Quite a machine (amazed)–24%. Wonderful machine–12%. Indifferent–9%. No response–9%. No response requested–3%.
4. *During conferences which will be held later, when the results are available, is there anything in particular you would like to know about your eyes?*
   Would like to know status of eyes–37%. Nothing in particular–30%. Asked questions requiring answer by eye specialist–12%. Whether or not glasses are needed–9%. No response–9%. No response requested–3%.

SUMMARY

In summary, the following conclusions may be drawn:

1. More studies should be performed in industry wherein differences in experimental groups are statistically determined and characteristics carefully noted.
2. Definite relationships exist between various degrees of injury in industrial accidents and measured visual functions.
3. The injury-free group is found significantly superior to the serious-injury group in the following tests:
   (a) Acuity, right eye–far vision.
   (b) Acuity, "worse" eye–near vision.
4. The injury-free group is found significantly superior to the high-frequency-of-minor-injury group in the following tests:
   (a) Acuity, right eye–far vision.

(b) Lateral phoria—far vision.
(c) Depth.

5. The difference scores, obtained by subtracting lateral phoria near-vision scores from lateral phoria far-vision scores, show virtually a significant critical ratio in favor of the injury-free group over the high-frequency-of-minor-injury group.
6. Tests, if administered under favorable conditions, may be used to build desirable human relationships between management and employees. The innate desire of individuals to know more about themselves furnishes the basis for this friendly relationship.

QUALIFICATIONS OF AN INDUSTRIAL TRAINING DIRECTOR

By EARL G. PLANTY
Training Director
Johnson and Johnson
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The selection of industrial training directors is no longer the simple problem it was in the prewar era. To meet the need for a wide variety of quick-training courses, the training director today must be a curriculum specialist familiar with basic laws of learning. Furthermore, because of new emphasis on employee attitudes and on the subjective factors affecting the learning process, he must understand the science of human relations. Mr. Planty here presents a bird's-eye view of the modern training director's duties and indicates the training, experience and personal attributes which will best fit him for them.

At one time during the past month a nationally known pharmaceutical concern, a well-known optical company, a cable manufacturer, and two milk companies were simultaneously seeking training directors at salaries ranging from $4,000 to $9,000 annually. This was in the New York City area alone. What kind of men are wanted for such positions?

Before the war, industrial training directors were frequently selected by combing the plant for some popular foreman or engineer, usually one with a long service record and an intimate knowledge of the company's production methods and operations. With labor turnover negligible and the supply of workers unlimited, training was a less difficult and less important service in pre-war days. The functions of the training department were few, and those few restricted to apprentice, vestibule or other forms of mechanical training. Training directors whose experience was limited

to mechanical fields usually served acceptably. Today, however, the duties of the training director require familiarity with a wide variety of activities, making it difficult for one with mere mechanical training to operate successfully.

SCOPE OF TRAINING PROGRAMS BROADENED

The advent of the war brought new training needs and with them new standards for the selection of a training director. Manpower *utilization* became more important than supply. Men and women had to be upgraded and retained for many new and unusual jobs. Some who had never worked had to have years of apprenticeship, of know-how and know-why, crowded into a few months. So great and so varied were the demands that well-organized training departments held themselves ready to offer lecture, conference, vestibule or on-the-job training to meet almost any need. During the past month, the writer has been requested by line or staff departments to offer training in report writing, elementary fractions, proportion and percentages, public speaking, elementary statistics for quality control inspectors, labor legislation, efficiency rating and fire prevention. In addition, there was a call to arrange an exhibit of company products, including a descriptive history of several hundred items. Besides these special requests and the training courses regularly offered, training has been initiated during the past fortnight in feminine hygiene for industrial workers and in the relief of operators' fatigue resulting from inadequate lighting.

The civilian training director at the Rome, New York, Air Service Command reports that he has prepared and offered over 100 different training courses in the past year. These courses included safety, Job Relations Training, Job Methods Training, Job Instruction Training, industrial hygiene, reporting income tax, problems of handling employees, typing, filing, shorthand, blueprint reading, vocational psychology for conference leaders, employee counseling, methods of conference leadership, production control, packing, shipping, car bracing, property accounting, warehousing, air corps organization, inspection, orientation, . . . and so it goes. A recent pamphlet of the Standard Oil Company of New Jersey lists over *one hundred* courses available through the training department. These embrace such varied subjects as oil chemistry, pipefitting, metallurgy, patternmaking, job evaluation, industrial relations, and supervisor training.

MODERN TRAINING DIRECTORS ARE CURRICULUM SPECIALISTS

The provision of such programs has involved preparation of work sheets, visual aids, manuals, and other instructional devices. Some of our

wartime teaching aids (such as those produced by Allis-Chalmers; Western Electric, at Kearny, New Jersey; The Plomb Tool Company; and the Ogden, Utah, Air Service Command) are equal to the best devices developed by public schools and colleges. In fact, most present-day training programs maintain curriculum laboratories including from one to a dozen persons—artists, photographers, industrial writers, and curriculum specialists.

Because of urgent wartime needs, only a few weeks have usually been given to outlining the courses, preparing teaching aids, selecting teachers, training them, and getting wartime training under way—a performance seldom duplicated in public or private educational institutions. Meeting the training problems involved in defense production within the time limits available would have been considered impossible a few years ago; and although public schools and governmental agencies have rendered valuable assistance, independent industrial training programs have made remarkable contributions.

NEW EMPHASIS REQUIRES DIFFERENT SKILLS IN DIRECTOR

Along with a wider range of training activities has come a new industrial attitude, an increased interest in the individual, which places an additional demand upon the abilities required of a training director. Relatively less emphasis is now being put upon the skill and the machine to be mastered and more upon the learner himself. Increased attention is directed to his personal well-being, physical and mental health, and all the subjective factors which might interfere with his happiness, personal growth (learning), and production.

James F. Lincoln, Cleveland manufacturer of welding equipment, expresses this view aptly:

> "Great as the American industrialist is, he has failed to develop the abilities of the worker to anything like the degree he has developed production methods with machinery. The *possibilities* of the individual are so much greater than the possibilities of machinery that this lack seems unbelievable."

The work in selection, clinical interviewing, and counseling of supervisors being done by the training department of the Propeller Division of the Curtiss-Wright Corporation is further practical evidence of the new emphasis in training. This program was developed with the help of Indiana University, Penn State, and New Jersey State Teachers' College at Montclair. The Curtiss-Wright program attempts "to provide foremen with a technique which would enable them to analyze personality traits and then deal with these abstract human factors more intelligently." The program involves counseling based on interviews and results from five tests: the Otis, the Bennett Mechanical Comprehension, the Bernreuter,

a personal audit, and a vocational interest form. Only a training director with good grasp of vocational psychology is competent to equip foremen to handle such a program.

FUNCTIONS OF TRAINING DIRECTORS

What training, experience and personal qualifications are best for the modern training director? Perhaps it would be well first to list a few skills which today's training director may have to exercise. He will have to do some of the following things, or train and supervise others who do them:

1. Determine training needs; plan new and revise old programs to meet these needs.
2. Analyze jobs and operations, and make job breakdowns for teaching purposes.
3. Prepare course outlines; write manuals, job sheets and flyers for short specialized courses in the broad fields of industrial engineering, industrial management, personnel administration, mechanical trades, vocational psychology, and teacher training.
4. Furnish and equip classrooms, arrange vestibule and production situations for training. Keep unit costs, prepare budgets.
5. Select teachers and train them in methods of instruction, conference leadership, use and development of instructional aids, selection and use of films, and classroom management.
6. Publicize, "sell" and dramatize training. Stimulate use of training service, develop news stories and bulletin board notices explaining training. Contact operating departments, line foremen and operators, win their confidence and offer services useful to them. Build employee attitudes receptive to training.
7. Contact state, Federal Government and private educational agencies and obtain their services where useful.
8. Set up plant library and encourage its use.
9. In some cases, supervise or edit company publications.
10. Measure and maintain employee morale through orientation and supervisor training and other activities.
11. Plan for, supervise and administer his own department, usually including from two or three instructors to as many as several hundred.

To meet the responsibilities cited above, the training director will have to deal with and understand newly employed and unskilled youth and women, returned veterans, the aged and the handicapped; he will train workers for unskilled or semi-skilled production operations; he will also provide training for clerical workers, mechanics and tradesmen, group leaders, foremen, executives, staff specialists, salesmen, and a variety of other workers. In the past, men who possessed only broad mechanical experience were considered capable of meeting the limited demands made upon training. Today insistence upon mechanical experience as a sole qualification is rare. In some cases such a background is not even desired.

A large Buffalo wire concern recently hired a training director. During the interview, the company director asked the applicant what he knew about wire making. The candidate replied honestly, "Nothing." "Good," said the director; and after he ascertained that the man knew the basic laws of learning, how manual skills were developed, the psychology of morale-building, how teachers are trained, and other details of learning

and training, he hired him. Experience has shown that the broader the training director's background, the better; the more practical industrial experience he has had, the better—but practical experience is only a beginning.

FORMAL TRAINING IN EDUCATION DESIRABLE

It is equally necessary that a training director have formal training in the field of education. In addition, he should have had classroom or shop teaching experience, and should be an excellent teacher himself and able to develop this ability in others. One large New England industry recently advertised for a training director, specifying that he hold an M.S. degree in science education. Before a director was appointed, this was extended to a preference for a Ph.D. degree in education. Majors, minors, courses, or at least experience in some of the following fields should be sought for in the administrator of a training department.

Most Important	*Desirable*
Methods of teaching	Educational supervision
Educational psychology	Educational administration
Curriculum development	Visual aids
Vocational education	Vocational guidance
Teacher training	Social psychology
Adult education	Vocational rehabilitation

PSYCHOLOGICAL TRAINING VALUABLE

Many training directors possess college majors and minors in educational or vocational psychology, which, next to education, is probably the best background for training. Dr. Albert Walton, Director of Foreman Training at American Viscose Corporation, combines a degree in engineering with a doctor's degree in psychology. Useful courses in psychology are those below:

Most Important	*Desirable*
Educational psychology	Vocational psychology
Psychology of learning	Tests and measurements
Individual differences	Occupations
Psychology of vocational education	Counseling
Personality development	Industrial sociology

OTHER DESIRABLE TRAINING

Training in personnel management is about equal to training in psychology as a help to training directors. Courses in interviewing, placement, occupations, personnel research, counseling, labor legislation, and industrial relations are all helpful. A recent issue of New York City newspapers carried the following advertisement which indicates the value

now being placed on academic background and on scientific knowledge of human relations:

> "Educational Director. Practical experience preferred. College Instructor on Industrial Relations (would) help. Resume. To $9,000."

A few years ago, college teaching experience would have barred its possessor from any consideration for such a position.

Industrial engineering also provides excellent background, if coupled with training or experience in education or psychology. Courses in time study, job evaluation, methods, layout, quality control, fatigue, safety or lighting are all helpful. Training in business administration, with emphasis upon office procedures, systems, economics, cost control, administration and industrial organization, is likewise useful. The two last-named fields are particularly helpful to one who is to train foremen or executives.

WORK EXPERIENCE

Those who combine some of the formal training described above with some of the following work experiences are usually well suited to organize and administer training programs:

1. Shop experience as production worker.
2. Supervision or administration in any field—foremanship, etc.
3. Personnel experience.
4. Engineering, especially industrial engineering.
5. Experience in industrial psychology.
6. Promotion, advertising, sales or publication fields.
7. Public speaking, law, the ministry, or conference leadership.
8. Industrial or public school teaching or administration.

Variety in work experience is highly desirable. The writer recently talked with a successful industrial personnel consultant who said that he had held 42 different positions before becoming a consultant. The prospective training director who has held several different types of positions has experienced some of the rapid occupational adaptations which a training man must make in his routine work. One who has held a single position or a single kind of position for too long a period is likely to be set and narrowed in viewpoint—something which is fatal in a training man, who must see things as his trainees do (and his trainees will range all the way from messengers and elevator operators to top executives).

PERSONAL CHARACTERISTICS

Probably the most important personal traits needed in a training man are intelligence and adaptability. He must be sensitive to others' needs and willing and able to meet them satisfactorily. He must not be self-satisfied or static in thought. He must be able to play the roles of all the thousands of employees in his industry. He must sense their social and psychological needs and their attitudes toward his efforts to meet those

needs. He should be as theoretical as a social psychologist and as practical as a city editor in response to his patrons' attitudes.

If intelligence is viewed as comprising abstract, social and mechanical traits, he should be very strong in the first two. Traditionally, we have stressed mechanical aptitude, and some smaller industries are still doing so. Although a high level of abstract intelligence is required, it will prove a distinct handicap if its possessor has any extreme evidence of it in his speech or manner. An academic background and an intellectual approach are desirable—provided they are not too evident.

A third personal trait of importance is the will to serve, sympathy, desire to help. It is this trait which will stimulate a training man to ascertain employee needs. It will maintain his will or "drive" to establish appropriate training once the need is recognized.

DEVELOPING INDUSTRIAL ATTITUDES

In the past, the major activities of training programs revolved around the development of mechanical skills. Today, however, these skills have been so dissected that the jobs now represent a narrow range of activity which a learner picks up quickly. A training director, if he is unfamiliar with job content, can assimilate what he needs to know even more quickly. The Bendix people have shown how *Know-Why* is just as important as *Know-How*. The Army, in devoting six to eight weeks to orientation of recruits, has indicated how important it considers first impressions and attitudes to be. Modern theories of industrial training advocate giving attention to the whole individual, to developing individual relationships, attitudes and understandings. These serve to motivate the use of the more mechanical skills with which training was once exclusively concerned. Building industrial attitudes is a complex educational venture. If a training department is worth establishing, it is worth staffing with those who know more about the art and science of teaching than the ordinary foreman, from whom the worker would obtain casual instruction if the training department did not exist.

It must be admitted in any analysis of factors influencing the selection of training directors that prejudice has for a long time kept out of the field the very persons who could benefit it most—namely, those with training for the job, those trained in the *whole* learning process and its stimulation. Recent events, however, have conspired to open the field to those best fitted for it. These include:

1. Increased training of foremen and executives, requiring training directors who can prepare programs valuable for and acceptable to highly paid specialists. All the shop experience in the world won't be much help in teaching or developing a

course in labor legislation or theories of industrial organization for junior executives.

2. Increased emphasis upon the trainee—his complete needs and desires, his abilities and attitudes—and decreased emphasis upon the production job, the method, the machine, the materials.
3. Wider variety of services offered by training departments—publications, morale, orientation, etc.
4. Tendency to consider the training director as an administrator who, like any director, must plan, organize, supervise his own staff, and therefore become more a manager and less a producer.
5. Closer relationship of training and other staff and service departments and the new responsibility given training men to interpret job evaluation, safety, methods, production control, and a host of other staff and service units to workers and supervisors.

In hiring a training director, place first in importance his knowledge of training, of learning, of teaching. A practical shop man who may know how to perform every operation in the plant may be completely ignorant of the learning curve, motivation and blocks to learning, the measurement and development of job attitudes, preparation of teaching manuals, job sheets and learning aids. If so, he is not the man for the training director's job.

The Employer's Freedom of Speech

THE employer's right of free speech under the Wagner Act is slowly being enlarged. The latest decision on the issue, by the Third Circuit Court of Appeals, finds no impropriety in an employer's sending a letter to his employees acknowledging their right to decide on unionism but pointing out the advantages of choosing an independent, unaffiliated union. The fact that the letter accompanied the posting of notices disestablishing a company union under a court-enforced NLRB order did not make the employer's action unlawful.

Here is a summary of the employer's free speech rights, based on the various court decisions rendered so far:

(1) The Wagner Act does not restrain the employer's right to express his opinion in regard to unionism even when addressed to his own employees.
(2) The employer's constitutional protection, however, does not extend to expressions which constitute restraint or coercion of the employees' right to self-organization.
(3) Unlawful restraint or coercion by speech expresses itself through the threat of economic reprisal, such as discharge.
(4) The threat of economic reprisal need not be expressed. It may be implied not solely from the language itself but from the totality of circumstances in the particular case. Whether the specific language is permissible can be judged only against the whole background of circumstances.
(5) The labor relations background of the employer is relevant in examining the circumstances in each case. Where the employer has engaged in other unfair labor practices, language otherwise permissive may become coercive.
(6) The employer's compliance with an NLRB order would seem to remove the coercive implication of prior unfair labor practices in a subsequent expression of opinion.

As the Wagner Act becomes even more widely applied and labor organization becomes stronger, the employer's freedom of expression will be allowed to grow. His statements will be less likely to be held coercive as the fear of reprisal is removed.

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State Labor Laws

ALABAMA enacted a labor relations law last year to correct some of the abuses that have crept into the trade union movement and industrial relations generally during recent years. This law was challenged in the courts. The Supreme Court of the state has ruled certain provisions of this law invalid, while upholding others.

Particular interest attached to the invalidation of a provision forbidding strikes not approved by a majority of the workers in a plant. The majority of the court found this prohibition to be an unreasonable restraint upon the rights of the individual. The objection of the court was not so much to the provision itself, but rather to the failure of the law to distinguish between lawful and unlawful strikes, and to relate the majority required to the whole collective bargaining unit established by the National Labor Relations Board, rather than to the employees of a single plant.

A Wisconsin law requiring that a strike be voted by a majority of the collective bargaining unit designated by the National Labor Relations Board has been upheld by the courts of that state. The Alabama decision quotes that ruling with approval, but differentiates such strike regulation from that contained in the Alabama statute.

The decision also held invalid provisions in the Alabama law barring secondary boycotts, since it was applicable to individuals as well as groups of employees. A prohibition of political contributions by both unions and employer organizations was invalidated because employers were thereby regulated in a law applicable to trade unions, contrary to the requirement of Alabama's constitution that a law cover only one subject.

On the other hand, provisions of the statute requiring unions to file financial statements and copies of constitutions and by-laws, barring supervisory employees from membership in unions that comprise other types of employees, and outlawing work permits as a condition of employment were upheld by the Alabama Supreme Court.

The decision on the Alabama labor law, and similar decisions by the highest courts of other states, clarify the extent to which state laws may be used to prevent abuses in trade unionism. Generally speaking, when such legislation avoids the pitfalls of unreasonable restraints on individual freedom and on the freedom of the press, it will be upheld unless it runs afoul of specific clauses in a state's constitution.

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AMA PERSONNEL CONFERENCE

The Fall Personnel Conference of the American Management Association will be held on Wednesday, Thursday and Friday, September 27-28-29, at the Hotel Pennsylvania, New York City.